

AMPEX

VPR-6
Operating Instructions



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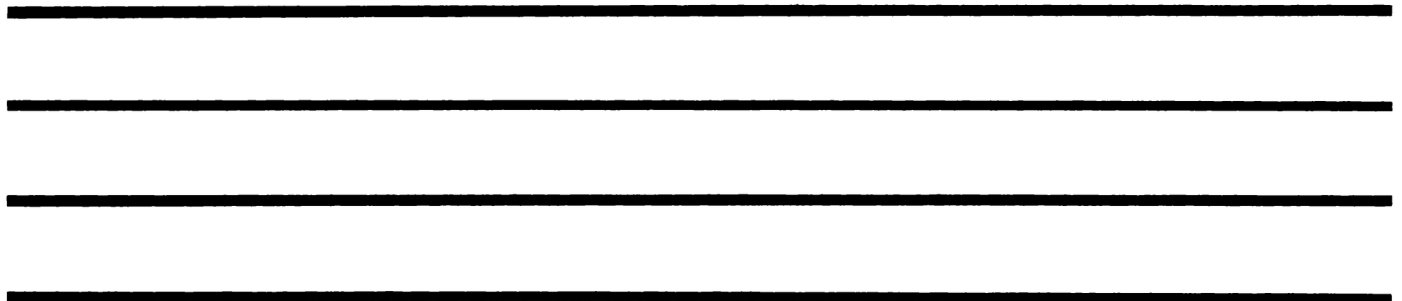
VPR-6

Video Production Recorder

Operating Instructions



Catalog No. 1809595-03
Issued: September 1987



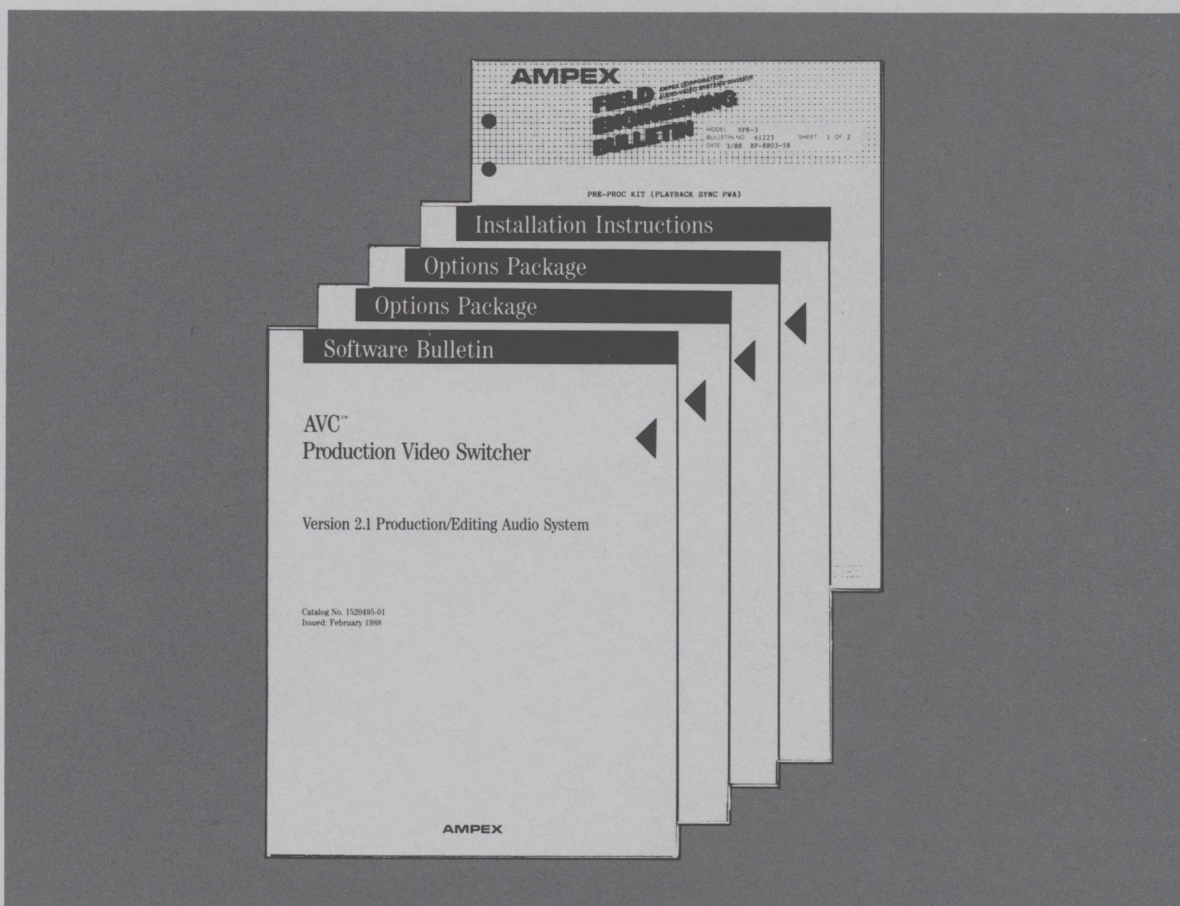
Prepared by

MSS Technical Publications
Ampex Corporation
401 Broadway
Redwood City, CA 94063-3199

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Catalog No. 1809595-03
Issued: September 1987
Printed in the U.S.A.

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340 Parkside Drive
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(818) 365-8627
(818) 365-6139 (FAX)

401 Broadway
Redwood City, CA 94063-3199
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(206) 251-8182
(206) 251-8684 (FAX)

AMPEX CORPORATION
401 BROADWAY
REDWOOD CITY, CALIFORNIA 94063
(415) 367-2011

EFFECTIVE: DECEMBER 1988

International

AUSTRALIA

Ampex Australia Pty. Ltd.
P.O. Box 199
55-61 Talavera Road, Unit A
North Ryde, 2113
New South Wales, Australia
21 Terra-Cotta Drive
Blackburn
Victoria, Australia

BELGIUM

Ampex S.A. Nivelles
Rue du Progres 10
1400 Nivelles, Belgium

BRAZIL

Ampex do Brasil Electronica Ltda.
Avenida Portugal 54
Urca CEP 22291
Rio de Janeiro, RJ Brazil

CANADA

Ampex Canada Inc.
1770 Argentia Road
Mississauga, Ontario
L5N 3S7, Canada
1116-55 Avenue, N.E.
Calgary, Alberta
T2E 6Y4, Canada
729 Meloche Street
Dorval Quebec
H9P 2S4, Canada

COLOMBIA

Ampex De Colombia, S.A.
Apartado Aereo 29613
Carrera 16A Nr. 79-25
Bogota, Colombia

ENGLAND

Ampex International, EAME HQ
Acre Road, Reading
Berkshire, RG2 0QR, England

FRANCE

Ampex SARL
Courcellor I
2 Rue Curnonsky
75017 Paris, France

GERMANY

Ampex Europa GmbH
Walter-Kolb-Strasse 9-11
6000 Frankfurt (Main) 70
West Germany

HONG KONG

Ampex World Operations, S.A.
709-711 World Finance Centre
(North Tower), Harbour City
Canton Road, Tsim Sha Tsui
Kowloon, Hong Kong

ITALY

Ampex Italiana S.p.A.
Casella Postale 10720
Roma-EUR
Italy
Ampex Italiana S.p.A.
Via Riccardo Gigante, 4
00143 Rome, Italy
Ampex Italiana, S.p.A.
Via Cristoforo Colombo, 49
20090 Trezzano Sul Naviglio
Milano, Italy

JAPAN

Ampex Japan Ltd.
P.O. Box 15
Tokyo Ryutsu Center, 6th Floor
6-1-1 Heiwajima, Ota-ku
Tokyo 143, Japan

MEXICO

Ampex de Mexico, S.A. De C.V.
Apartado Postal No. 13-615
Cerro del Otate 133
Col. Pedregal de San Francisco
Delegacion Coyoacan
Mexico D.F., 04320

NETHERLANDS

Ampex B.V.
P.O. Box 9026
3506 GA Utrecht, Netherlands
Colorado-Dreef 36
3565 BV Utrecht, Netherlands

NEW ZEALAND

Ampex New Zealand
MSAS House
7 Freight Place
Mangere, Auckland
New Zealand

SPAIN

Ampex Iberica S.A.
Calle Princesa No. 47
5th Floor C & D
Madrid 8, Spain

SWEDEN

Ampex Scandinavia A.B.
P.O. Box 7056 (Rissneleden 8)
S-172 07 Sundbyberg, Sweden

SWITZERLAND

Ampex World Operations S.A.
P.O. Box 1031
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1701 Fribourg
Switzerland

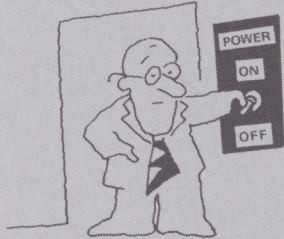
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Safety and First Aid Suggestions

Regardless of how well electrical equipment is designed, personnel can be exposed to **dangerous electrical shock** when protective covers are removed for maintenance or other activities. Therefore, it is incumbent on the user to see that all safety regulations are consistently observed and that each individual assigned to the equipment has a clear understanding of the first aid related to electrical hazards.

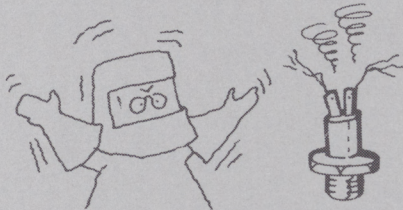
In addition, the following safety practices must be followed:



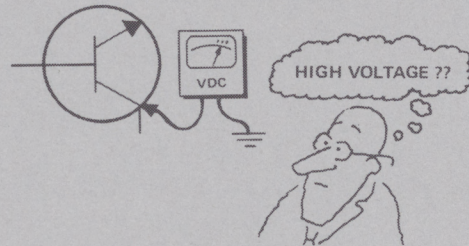
Do not attempt to adjust unprotected circuit controls or to dress leads with power **on**.



Always avoid placing parts of the body in series between ground and circuit points



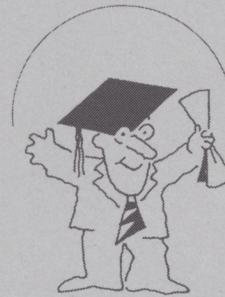
To avoid burns, do not touch heavily loaded or overheated components without precaution.



Remember that some semiconductor cases and solid-state circuits carry high voltages.



Do not assume that all danger of electrical shock is removed when power is **off**. Charged capacitors can retain dangerous voltages for a long time after power is turned off. These capacitors should be discharged through a suitable resistor before any circuit points are touched.



Don't take chances. Be fully trained. Ampex equipment should be operated and maintained by fully qualified personnel.

If someone seems unable to free himself while receiving an electrical shock, **turn power off** before rendering aid. Muscular spasm or unconsciousness can make a victim unable to free himself from the electrical power.

WARNING

DO NOT TOUCH VICTIM OR HIS CLOTHING BEFORE POWER IS DISCONNECTED OR YOU CAN ALSO BECOME A SHOCK VICTIM.

If power cannot be turned off immediately, **very carefully** loop a length of dry nonconducting material (such as rope, insulating material, or clothing) around the victim and pull him free of the power. Carefully avoid touching him or his clothing until free of power. Immediately start the appropriate first aid procedures.

Good Practices

In maintaining the equipment covered in this manual, please keep in mind the following, standard good practices:

When connecting any instrument (oscilloscope, waveform, monitor, etc.) to a high-frequency output, use the appropriate termination resistor at the input of the instrument, unless the instrument is terminally internally.



When inserting or removing printed wiring assemblies (PWAs), cable connectors, or fuses, always turn off power to the affected portion of the equipment. After power is removed, allow sufficient time for the power supplies to bleed down before reinserting PWAs.



When troubleshooting, remember that FETs and other metal-oxide semiconductor (MOS) devices may appear defective because of leakage between traces or component leads on the printed wiring board. Clean the printed wiring board and recheck the MOS device before assuming it is defective.



When replacing MOS devices, follow standard practices to avoid damage caused by static charges and soldering.



When removing components from PWAs (particularly ICs), use care to avoid damaging PWA traces.



Warning

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case, the user, at his own expense, will be required to take whatever measures may be necessary to correct the interference.



Note

This system was tested using the shielded interconnect cables provided with the unit. Failure to use the cables provided may result in radio interference outside acceptable limits.



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VPR-6 Video Production Recorder with TBC-6 Time-Base Corrector

SECTION 1

GENERAL INFORMATION

1-1 INTRODUCTION

This manual contains information and procedures necessary to operate the VPR-6 Video Production Recorder. Included are complete descriptions of all operator controls and indicators, as well as detailed explanations of the setup and operating modes. This information is applicable to units containing software version 2.

The VPR-6 is a one-inch, one-field-per-scan, helical videotape recorder with a 124-minute record/play time. It is compatible with all standard features listed in the SMPTE Type C and EBU Format C specifications for 1-inch, helical scan videotape recordings. The VPR-6 can be used with 525-line/60-Hz or 625-line/50-Hz monochrome or NTSC/PAL/PAL-M/SECAM color systems.

1-2 STANDARD FEATURES

Some of the features and capabilities of the VPR-6 in its standard configuration are listed below:

- Dual microprocessors control the transport and servo subsystems.
- High-mass reel hubs accommodate reel sizes ranging from 15 seconds to 2 hours with equal delicacy and precision.
- Automatic Scan Tracking (AST*) uses an adjustable head to ensure optimum head-to-track alignment.
- Tape accelerates from stop to play speed in 0.5 seconds and from stop to three times play speed in 1.5 seconds.
- Variable-speed shuttle moves tape at speeds approaching 500 in/s in both forward and reverse.
- Variable-play speed ranges from one times reverse play speed to three times forward play speed.
- Three standard audio channels have full bandwidth record and playback capability.
- Color framer minimizes horizontal picture shift during editing and switching.
- Autochroma automatically adjusts field-by-field playback equalization.
- Tape timer provides digital time display with one-frame accuracy.

* TM Ampex Corporation

VPR-6

- Machine has automatic fault detection with an interactive fault isolation program.
- Supplies audio and video confidence monitoring.
- Has keypad for entering setup condition codes, edit entrance and exit points, and edit point trim values.
- Digital display provides cue point and diagnostic information.
- Auto edit control enables complete, automatic editing. This includes programmable edit entrance and exit points, as well as multi-VTR control and rehearsal features.
- TSO/JOG control allows tape speed to be increased 7% in either direction and enables tape to be jogged a frame at a time in either forward or reverse.
- Machine provides five-cue-point search-to-cue capability.

1-3 OPTIONAL FEATURES

VPR-6 performance is enhanced with the addition of optional equipment listed below:

- A fourth audio channel provides full bandwidth record and playback capabilities (option III of the EBU C Format specification).
- Sync head provides sync information during vertical dropout on the track otherwise designated as the fourth audio channel (option of the EBU C and SMPTE C Format specifications).
- Parallel Remote Interface PWA provides a data link to the SMC-100 Slow Motion Controller, STC-100 Search-to-Cue accessory, or parallel remote control panel.
- Serial Remote Interface PWA enables communication with any controlling system conforming to the SMPTE RS422 serial communications concept.
- A TBC-6 Time-Base Corrector guarantees a broadcast quality video signal from the VPR-6 during normal, slow motion, and still-frame playback. A viewable picture is also present in shuttle mode.
- Time-code reader-generator/character display provides characters for the monitor screen, as well as generating and reading time code on audio channel 3. Installation of this option is recommended if the VPR-6 will be interfaced to an editing system.

SECTION 2

SYSTEM OVERVIEW

2-1 SYSTEM OVERVIEW

The VPR-6 is designed to operate as an integral part of a complete Ampex audio/video system (see Figures 2-1 and 2-2). System components include the following equipment:

- The **Ampex Computerized Editor (ACE)** provides the operator with virtually complete, centralized control of the post-production system. ACE can be used to remotely operate a special effects generator, a production switcher, and up to 16 VTRs. ACE also simplifies the editing process by repairing edit overlaps and filling in gaps automatically.
- **Ampex Digital Optics (ADO)** allow video images to be modified and manipulated at real-time video rates. Pictures may be rotated around any combination of axes in three dimensions and displayed with true perspective in the third dimension.
- **Ampex 4100** and **AVC** production switchers bring multilevel M/E capability to the studio. These switchers combine a high degree of video performance with ease of operation.
- The **SMC-100 Slow Motion Controller** is used in a live video context to provide remote speed control for the VPR-6. This unit can control transport speed modes from freeze frame to variable speed shuttle.
- The **ESS-3 Electronic Still Store** system provides a maximum of 6400 still pictures on disk for immediate use by the studio. Video processing techniques, specifically designed for still images, yield playback pictures whose quality often exceeds that of the originals.
- The **STC-100 Search-to-Cue accessory** can recall up to 99 auto cue points or 99 still recordings. The STC-100 also has the ability to store its entire memory on tape for recall by another STC-100 at another location.
- The **VPR-2B Remote Control Panel** accessory allows parallel remote control of transport, editor, and control functions (except record lockout) at distances of up to 328 feet (100 meters) from the VTR.
- The **VRC-2 VTR Remote Controller** controls up to four Type C VTRs using RS-422 serial communications. It has keys for VTR selection as well as a full set of operator controls for mode and editing control of the VTRs. A two-line display shows tape time or time code, VTR selection, error messages, system status, and other information. A keypad is provided for time-code, cue-point and edit-point entry, and for setting preroll time.

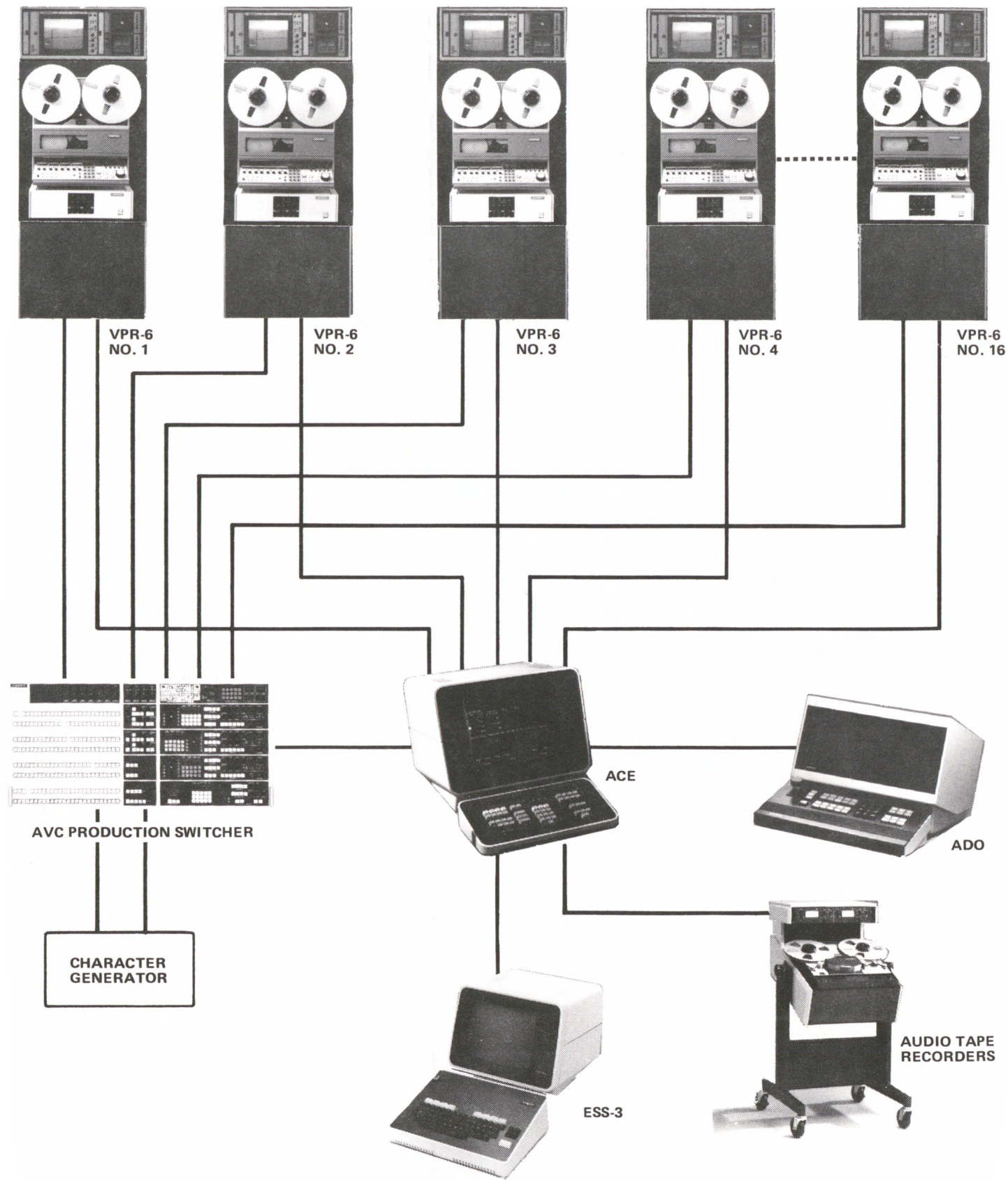


Figure 2-1. Systems Configuration Diagram—Typical Post Production Studio

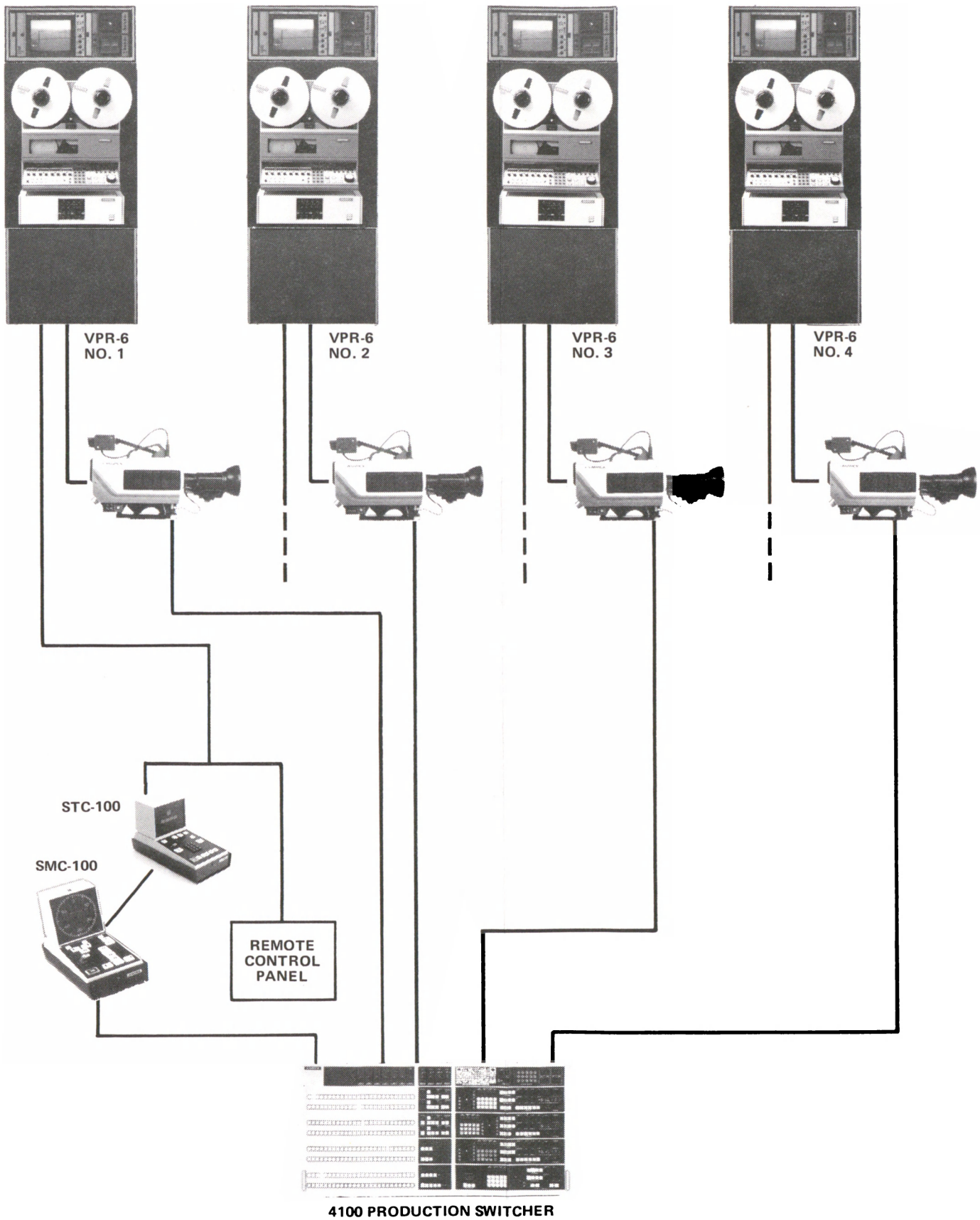


Figure 2-2. Systems Configuration Diagram—Typical Mobile (On-Air) Studio

SECTION 3

CONTROLS AND INDICATORS

3-1 OPERATOR CONTROLS AND INDICATORS

The operator control panel contains all controls and indicators necessary for the recording, editing, and playback of videotape (see Figure 3-1). Panel controls and indicators are separated into six major groups (see Figure 3-2):

- Input/output controls and metering
- Mode enable controls
- Keypad
- Editing controls
- Transport controls
- Secondary controls

These control groups are described in Tables 3-1 through 3-6.

3-2 TAPE/EE OPERATING CONDITIONS

The relationship of the VPR-6's audio and video heads to their respective signal sources varies with each operating mode. This relationship also depends on which signal is presented to the outputs—either the off-tape signal (Tape) or the unrecorded input signal (EE).

Tables 3-7 through 3-9 provide head-to-input signal relationships for the video channel and four channels of audio. Table 3-10 lists video rf meter sources.



CONTROL PANEL

Figure 3-1. Operator Control Panel

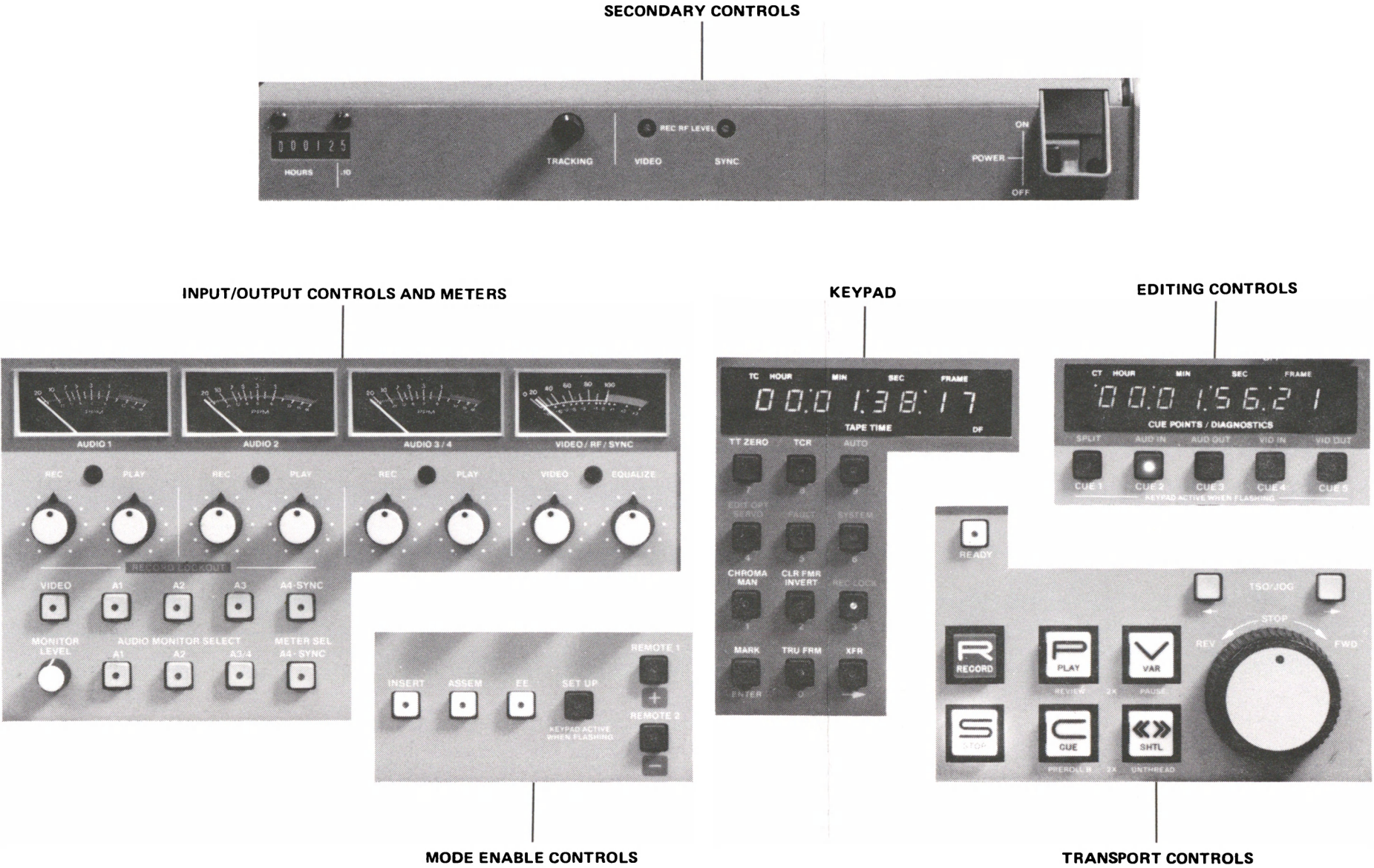


Figure 3-2. Major Operator Control Groupings

VPR-6

Table 3-1. Input/Output Controls and Meters

Index No.	Description	Function
1	AUDIO 1 meter	Indicates audio channel 1 signal amplitude. 0 vu is normal operating level (+ 8 dBm, balanced output).
2	AUDIO 2 meter	Indicates audio channel 2 signal amplitude.
3	AUDIO 3/4 meter	Indicates audio channel 3 signal amplitude. If optional fourth audio channel is installed, either channel may be selected via METER SEL.
4	VIDEO/RF/SYNC meter	When in play or variable play mode, displays rf level. If optional sync channel is installed, the sync level may also be selected for display via METER SEL. In record mode, indicates video record level. In other modes, indicates rf if EE indicator is off, or video record level if EE indicator is on.

(Continued next page)

Table 3-1. Input/Output Controls and Meters (Continued)

Index No.	Description	Function
5	EQUALIZATION control	When CHROMA MAN indicator is off, chroma burst amplitude is automatically adjusted. Detent position is unity, and adjustment range of this control is limited to a very narrow band on either side of detent. When CHROMA MAN indicator is on, this control provides manual equalization adjustment to video frequency response in playback. Detent position has no significance.
6	VIDEO RECORD control	Provides adjustment of video input from zero (full ccw) to twice input amplitude (full cw). Center (detent) position used for unity gain setting when input level is 1.0 Vp-p.
7	AUDIO (3/4) PLAY control	Provides adjustment of audio channel 3 or 4 playback level. Center (detent) position used for unity gain setting.
8	AUDIO (3/4) RECORD control	Provides adjustment of audio channel 3 or 4 record level. Center (detent) position used for unity gain setting.
9	AUDIO (2) PLAY control	Provides adjustment of audio channel 2 playback level. Center (detent) position used for unity gain setting.
10	AUDIO (2) RECORD control	Provides adjustment of audio channel 2 record level. Center (detent) position used for unity gain setting.
11	AUDIO (1) PLAY control	Provides adjustment of audio channel 1 playback level. Center (detent) position used for unity gain setting.
12	AUDIO (1) RECORD control	Provides adjustment of audio channel 1 record level. Center (detent) position is used for unity gain setting.
13	VIDEO RECORD LOCKOUT switch/indicator	Video recording inhibited when indicator lights. Record capability is interlocked through REC LOCK switch. If sync channel option is installed, pressing this switch will also inhibit sync channel recording.

(Continued next page)

Table 3-1. Input/Output Controls and Meters (Continued)

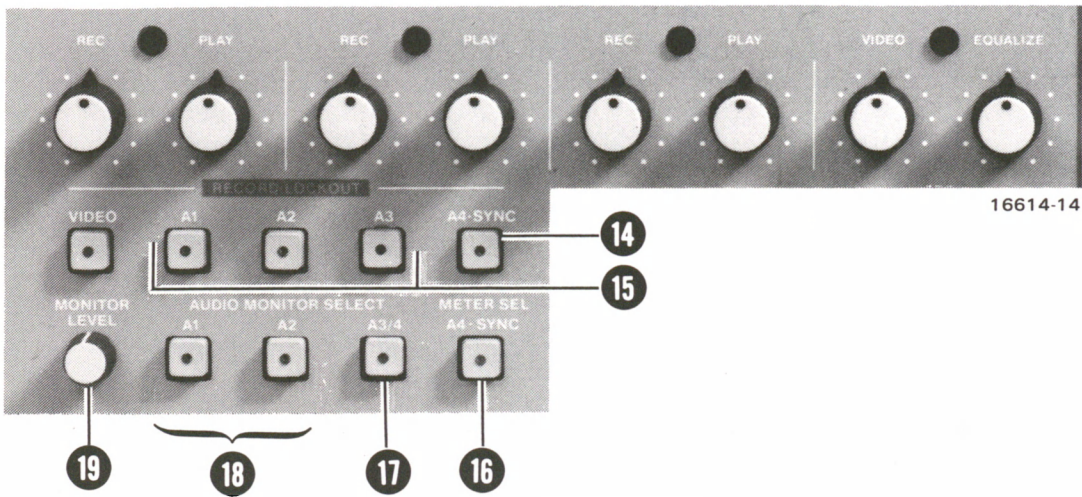
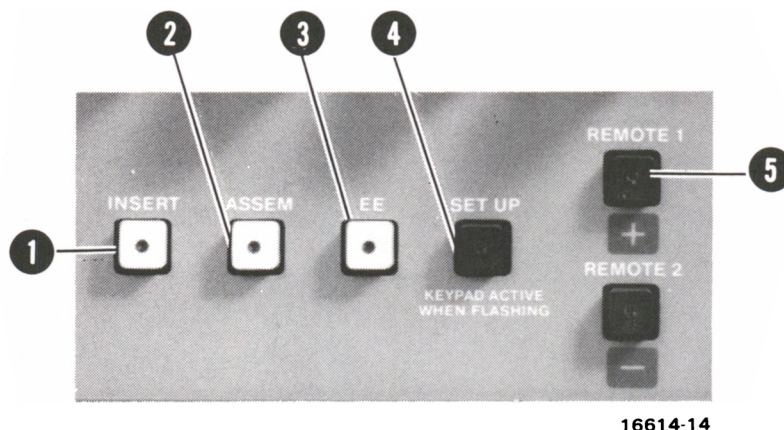
 <p>The diagram shows a control panel with four main sections. Each section has a 'REC' button and a 'PLAY' button. The first section is for VIDEO, followed by AUDIO MONITOR SELECT (A1, A2, A3/4, A4-SYNC), and then VIDEO and EQUALIZE. Below the AUDIO MONITOR SELECT section are four switches labeled 14, 15, 16, and 17. A bracket labeled 18 groups switches 14, 15, and 16. A potentiometer labeled 19 is also shown. The diagram is labeled 16614-14 in the top right corner.</p>		
Index No.	Description	Function
14	AUDIO 4/SYNC RECORD LOCKOUT switch/indicator	Inhibits recording of fourth audio channel or sync, dependent upon machine configuration.
15	AUDIO 1-3 RECORD LOCKOUT switch/indicators (3)	When individual switch is pressed and indicator lights, recording of that audio channel is inhibited. Record capability is interlocked through the REC LOCK switch.
16	METER SELECT AUDIO 4/SYNC switch/indicator	Selects either audio 4 or sync channel metering, depending on machine configuration and which accessory is installed.
17	AUDIO 3/4 MONITOR SELECT switch/indicator	Enables or inhibits monitoring of audio channel 3. If fourth audio channel is installed and selected (see Table 4-1 Index No. 6) channel 3 is monitored when METER SELECT indicator goes off and channel 4 is monitored when indicator lights.
18	AUDIO 1-2 MONITOR SELECT switches/indicators (2)	Enables or inhibits monitoring of audio channels 1 and 2. Indicator lights for enabled channel(s). Any combination of audio channels can be monitored simultaneously.
19	MONITOR LEVEL pot	Controls speaker (or headphone) volume when monitoring audio channels.

Table 3-2. Mode Enable Controls

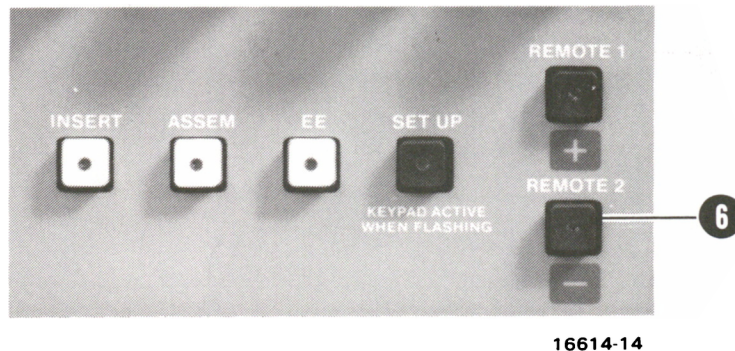


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Index No.	Description	Function
1	INSERT switch/indicator	When indicator lights, insert editing is enabled (video and audio channels are edited separately or in any combination, control track is not recorded).
2	ASSEM switch/indicator	When indicator lights, assemble editing is enabled.
3	EE switch/indicator	When indicator lights, input signals are routed through the record and playback circuitry to the output, but are not recorded on tape. When indicator is not lit, off-tape audio and video appear at the outputs. See paragraph 3-2 for VPR-6 operating conditions when in tape and EE modes.
4	SET UP switch/indicator	This switch allows the operator to select special setup modes via the keypad. When indicator lights, the desired setup mode may be selected. Refer to Section 5-1.
5	REM 1 switch/indicator	Enables parallel, serial, or simple remote control capability. When REM 1 indicator is not lit, control of the VPR-6 is exercised at the local control panel assembly. Pressing REM 1 switch transfers control of VTR to the selected remote control accessory; however, STOP mode switch on primary control panel remains enabled. Selection of remote control input source is made by the Remote 1 setup procedure (see paragraph 5-4).

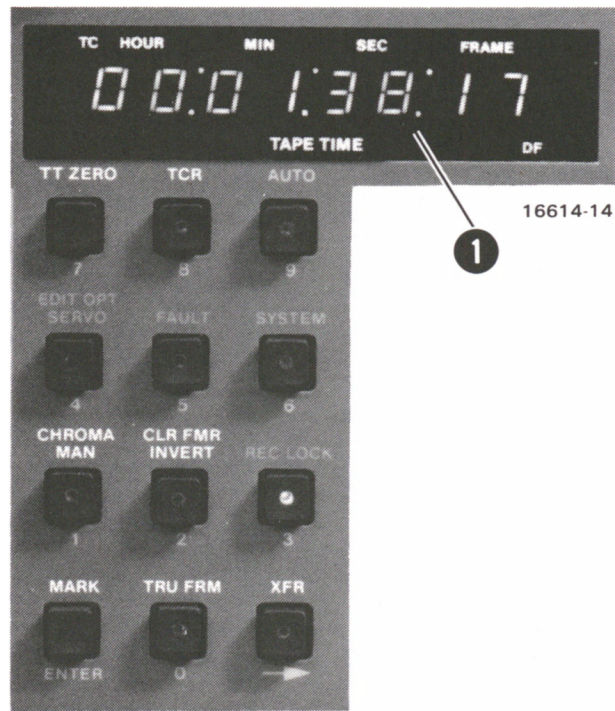
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Table 3-2. Mode Enable Controls (Continued)



Index No.	Description	Function
6	REM 2 switch/indicator	Enables or inhibits auto edit (multi-VTR) mode. When two or more VTRs are interconnected via the multi-VTR cable, depressing the REM 2 switch on the source VTR enables the record VTR to remotely control cue and play modes of the source VTR(s).
<p style="text-align: center;">Note</p> <p>The following functions of the REM 1 and REM 2 switches are enabled only when the keypad has been activated via the SETUP or CUE 1-5 switches.</p>		
	+/- switches (2)	Pressing (+) or (-) determines whether frame trim count, entered with the keypad numeric switches, will be added to or subtracted from the selected register. Frame trim count is shown on the cue point/diagnostics display (see Table 3-4 and paragraph 7-7).

Table 3-3. Keypad



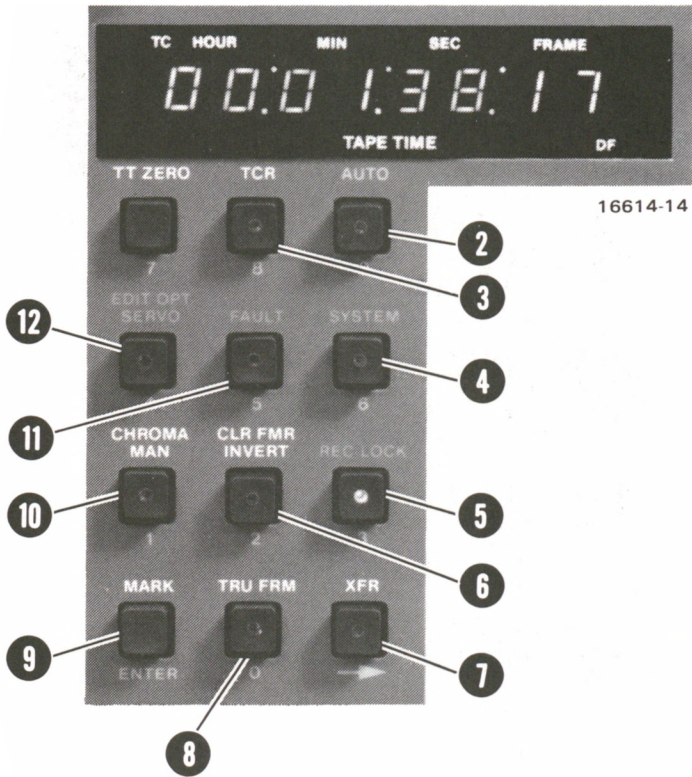
Index No.	Description	Function
1	NUMERIC DISPLAY TC indicator DF indicator	Displays current tape time in hours, minutes, seconds, and frames. If TCR indicator is lit, TC indicator flashes when time code is not present. If TCR indicator is off, the TC indicator lights when time code is present and goes out when time code is absent. When lit, indicates that drop frame time is displayed. Provides drop frame information for selected timer display (either tape time or time code reader in 60 Hz systems). Not applicable to PAL/SECAM systems.

Note

All primary functions of the keypad switches are alternate action. The function performed by an individual switch is predicated upon the current operating mode of the keypad. The following switches are active when the keypad is in its default (inactive) condition.

(Continued next page)

Table 3-3. Keypad (Continued)

		
Index No.	Description	Function
2	AUTO switch/indicator	When this switch is pressed and the indicator lights, auto edit mode is enabled. Additionally, the SPLIT, AUD IN, AUD OUT, VID IN and VID OUT edit point functions are enabled (refer to Table 3-4).
3	TCR (Time Code Reader) switch/indicator	When lit, allows time-code reader time to be viewed on tape time display.
4	SYSTEM switch/indicator	SYSTEM indicator lights when an operating limitation exists in the VTR. SYSTEM indicator blinks momentarily or continuously, depending on the nature of the condition. Condition can be identified by pressing the SYSTEM switch which causes a numerical indication to be displayed. These indications are described in paragraph 4-4 and Table 4-2. A total of five system indications can be held for display.

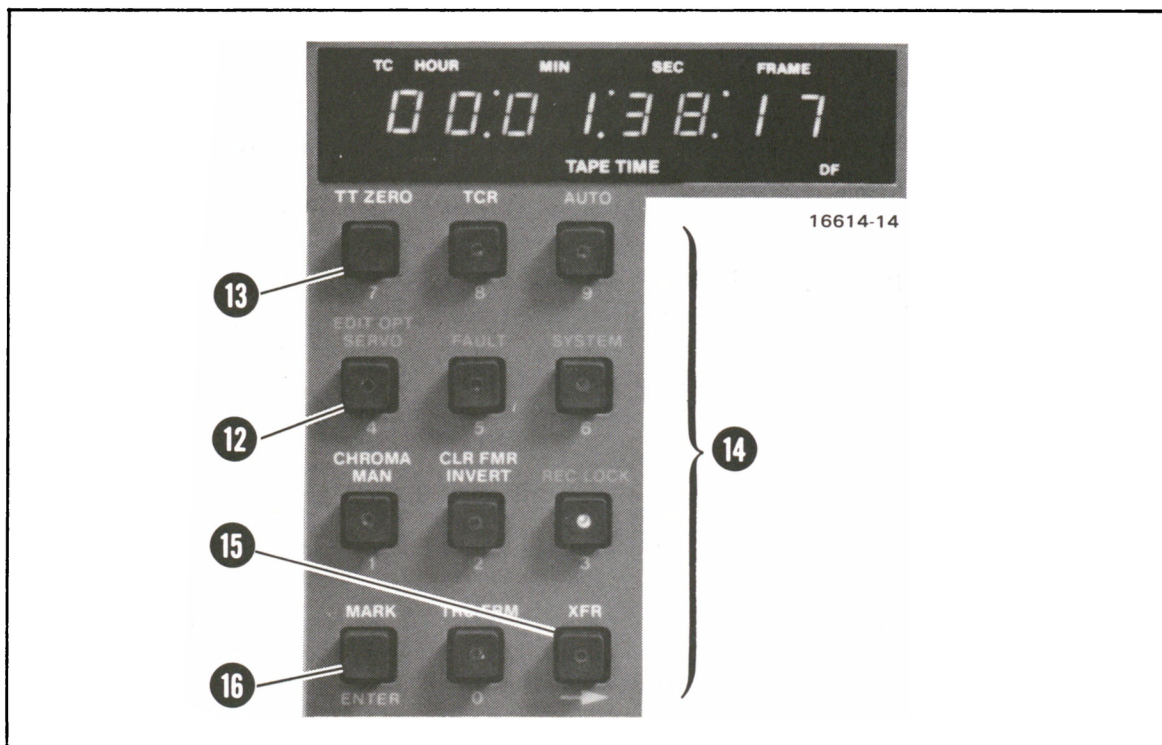
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Table 3-3. Keypad (Continued)

Index No.	Description	Function
5	REC LOCK switch/indicator	Pressing this switch while holding down STOP or RECORD, inhibits recording on all channels. Repeating this action disables REC LOCK.
6	CLR FMR/INVERT switch/indicator	Activated when the NTSC or PAL color framer is turned on (refer to procedure given in paragraph 5-14). CLR FMR/INVERT allows either odd or even frame referencing to be selected. Pressing switch inverts color frame phase in relation to reference. Indicator lights whenever signal is inverted.
7	XFR switch/indicator	Transfers data from one edit/cue point register to another (see paragraph 7-4).
8	TRU FRAME switch/indicator	Enables true frame playback for tape speeds between stop and 2X forward play. When in true frame operation, at least two consecutive fields are reproduced between AST track jumps.
9	MARK switch	Allows tape time information to be entered into a selected edit/cue point register without activating keypad (see paragraph 7-4).
10	CHROMA MAN switch/indicator	Allows EQUALIZATION control to be used in either of two adjustment ranges (see Table 3-1).
11	FAULT switch/indicator	If self-test logic detects a fault in the system, the FAULT indicator blinks continuously. The fault can be identified by pressing FAULT, numerical indication of the fault is displayed. See paragraph 4-4 and Table 4-2.
12	EDIT OPTIMIZE/SERVO switch/indicator	EDIT OPTIMIZE switch function is enabled only when in edit play mode (PLAY and INSERT/ASSEM indicators lit). When FAULT and EDIT OPTIMIZE are pressed, indicator lights, indicating that edit optimization is taking place. Edit optimization is required only when performing interchange edits (on a tape recorded by a different VTR). During edit optimization, VPR-6 automatically follows tape track and rephases scanner tach to the timing of the on-tape

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Table 3-3. Keypad (Continued)



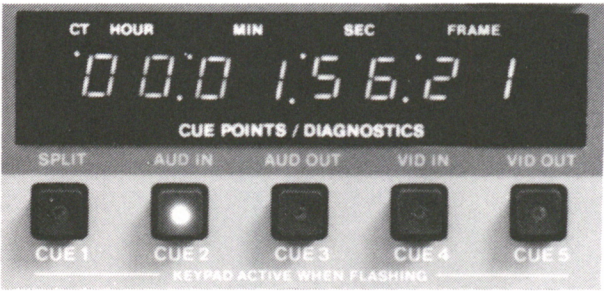
Index No.	Description	Function
12	EDIT OPTIMIZE/ SERVO switch/ indicator (Continued)	video signal. If VPR-6 is unable to rephase scanner tach to tape, SYSTEM indicator lights SERVO indicator lights to indicate an unlocked servo. Pressing SERVO causes the condition of all servos to be displayed on the cue point/diagnostics display (see paragraph 4-5).
13	T T ZERO switch	Zeros the tape timer.
<p style="text-align: center;">Note</p> <p style="text-align: center;">The following keypad functions are enabled only when SETUP or one of the CUE/EDIT POINT switches is selected.</p>		
14	Numeric 0-9 switches (10)	Used to enter setup condition identifiers, edit entrance and exit points, cue points, and trim values. Entries are shown on cue point/diagnostics display. Numeric entry is not recognized by the VPR-6 until ENTER is pressed. If ENTER is not pressed within 5 seconds after last entry, keypad entry is lost.

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Table 3-3. Keypad (Continued)

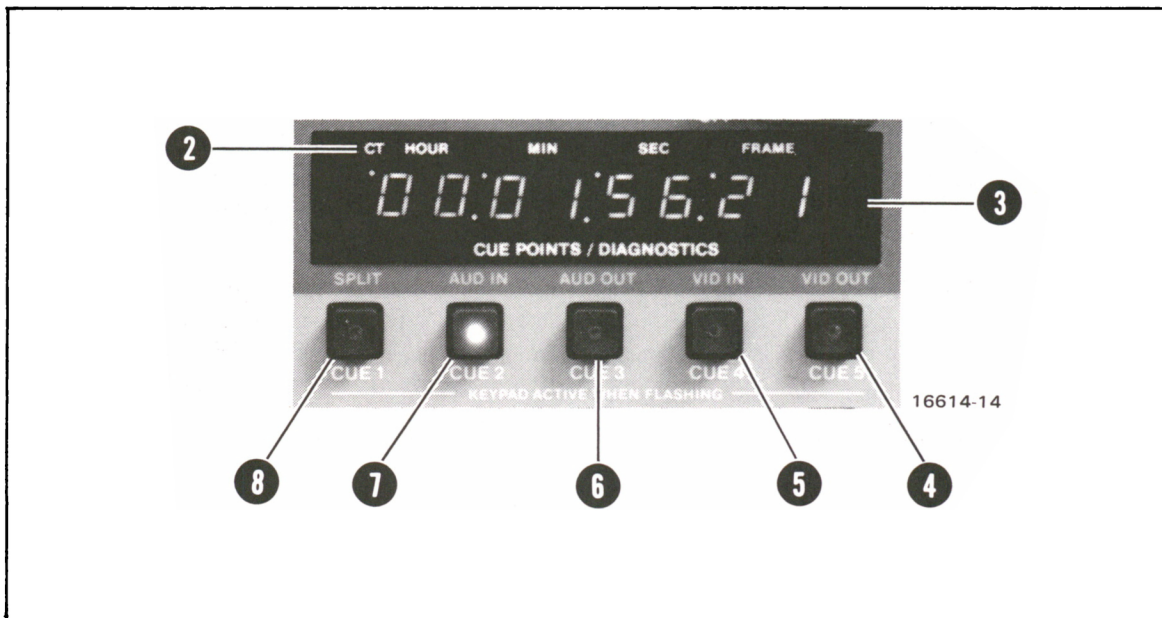
Index No.	Description	Function
15	Backspace (arrow) switch	Each depression of this switch shifts displayed number last entered with keypad numeric switches to the right. Used to correct errors in keypad entry.
16	ENTER switch	Loads and validates keypad entries made with numeric switches. VPR-6 does not recognize keypad entry until this switch is pressed. ENTER must be pressed within 5 seconds after last entry or keypad entry and display are lost.

Table 3-4. Editing Controls

<div><p>16614-14</p></div>		
Index No.	Description	Function
1	CUE 1-5 switches/indicators (5)	Switches provide access to five independently selectable registers, storing five individual cue point values. When lit, indicates active cue point. When flashing, indicates that keypad is active.

(Continued next page)

Table 3-4. Editing Controls (Continued)




Index No.	Description	Function
<p style="text-align: center;">Note</p> <p style="text-align: center;">The following editing control functions are enabled only when the AUTO switch, on the keypad, is activated (AUTO indicator lit).</p>		
2	CT indicator	Flashes when control track is not present.
3	CUE POINT/ DIAGNOSTICS DISPLAY	Displays selected edit/cue point values, percentage of play speed, keypad input, setup codes, servo status, and system fault and diagnostics codes.
4	VID OUT switch/ indicator	When switch is pressed and indicator lights, current video exit edit point value is displayed. When switch is pressed a second time (indicator flashing), keypad is active and a new value may be entered (see paragraph 7-4).
5	VID IN switch/ indicator	When switch is pressed and indicator lights, current video entrance edit point value is displayed. When switch is pressed a second time (indicator flashing), the keypad is active and a new value may be entered (see paragraph 7-4).
6	AUD OUT switch/ indicator	When switch is pressed and indicator lights, current audio exit edit point value is displayed. When switch

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Table 3-4. Editing Controls (Continued)

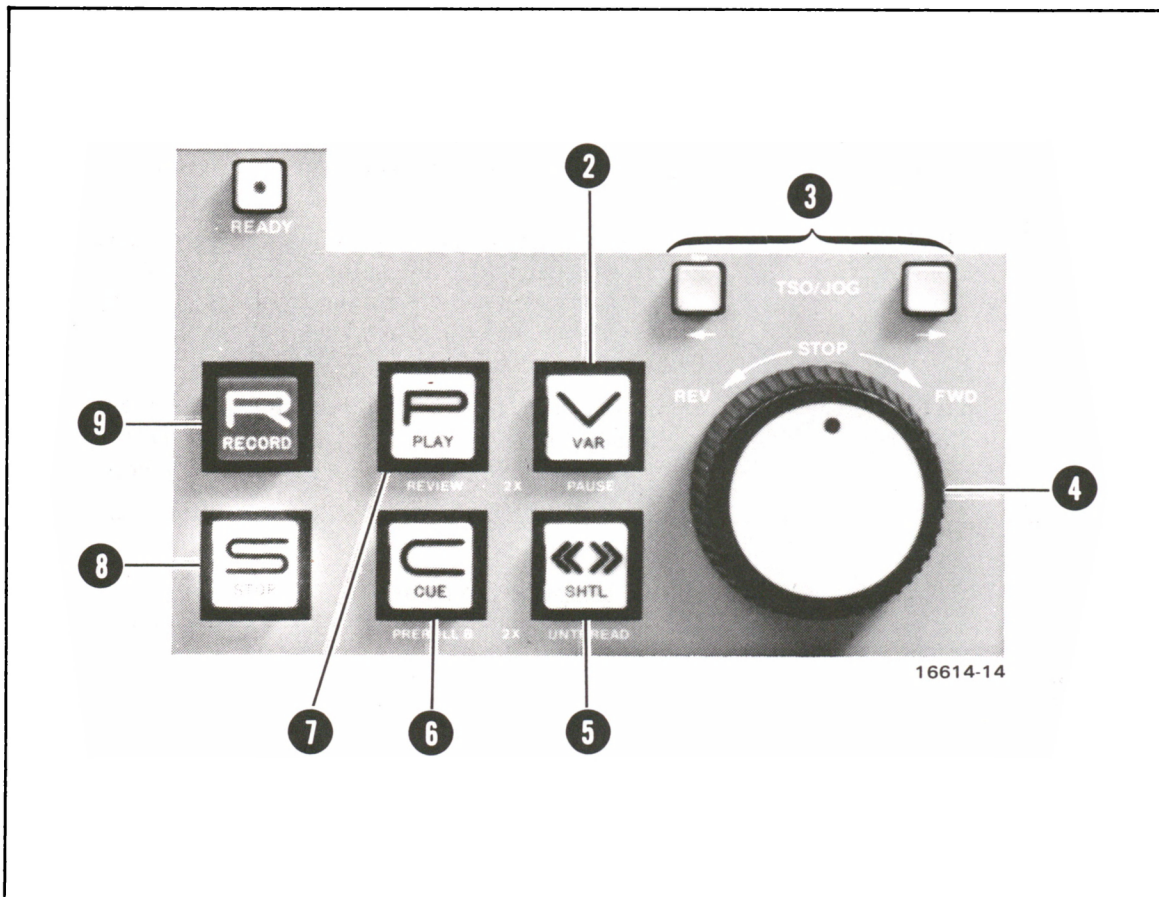
Index No.	Description	Function
6 (Con't)	AUD OUT switch/ indicator	is pressed a second time (indicator flashing), the keypad is active and a new value may be entered (see paragraph 7-4).
7	AUD IN switch/ indicator	When switch is pressed and indicator lights, current audio entrance edit point value is displayed. When switch is pressed a second time (indicator flashing), the keypad is active and a new value may be entered (see paragraph 7-4).
8	SPLIT switch/ indicator	When switch is pressed and indicator lights, video and audio channels are isolated and may be edited separately. When indicator is off, exit and entrance point registers are tied together.

Table 3-5. Transport Controls

		
Index No.	Description	Function
1	READY switch/ indicator	Controls VTR condition when in stop mode. When indicator is not lit, VTR is in standby condition (all motors off). Pressing READY switch commands VTR to come up to ready condition (scanner motor starts and comes up to lock speed). VTR is always in standby condition when power is initially applied.

(Continued next page)

Table 3-5. Transport Controls (Continued)



Index No.	Description	Function
2	VAR PLAY/PAUSE switch/indicator	When pressed, indicator lights, and transport control knob is enabled, providing variable speed playback. When switch is pressed twice in succession, tape motion stops and the indicator flashes, signaling pause mode. Pressing switch again restarts tape motion at speed commanded by transport control knob.
3	TSO/JOG switches(2)	When in any STOP mode (STOP, READY-tape tensioned, or in VAR PLAY or SHUTTLE mode with the transport control knob in the 0 detent position), pressing either switch causes tape to jog one frame in the indicated direction. Tape moves one frame each time switches are pressed. When in PLAY mode, pressing either switch overrides tape speed 7% in the indicated direction.

(Continued next page)

Table 3-5. Transport Controls (Continued)

Index No.	Description	Function
4	TRANSPORT CONTROL KNOB tape speed control	When activated by SHUTTLE, provides variable speed shuttle up to 500 in/s (1270 cm/s) forward or reverse. When activated by VAR PLAY, provides variable speed play dependent upon TBC capability and selected range (see paragraph 5-10). When knob is rotated to normal play speed position, PLAY switch/indicator lights.
5	SHUTTLE/ UNTHREAD switch/indicator	When pressed, indicator lights, and transport control knob is enabled, providing shuttling of tape in either direction. When in shuttle mode, tape will not run off reels in either direction. Pressing this switch twice in succession commands transport to unthread. Indicator flashes during unthreading (see paragraph 5-5).
6	CUE/PREROLL B switch/indicator	When switch is pressed, automatically cues tape to earliest edit point or to selected cue point, with "A" preroll. If CUE is pressed twice in succession, tape is cued to edit point or selected cue point with "B" preroll (see paragraphs 5-17 through 5-20). Indicator flashes during cue to "B" preroll.
7	PLAY/REVIEW switch/indicator	Initiates playback mode of operation. Lit when active. Indicator also lights during playback portions of edit record operations. Also lights when tape is moving at normal play speed in VAR PLAY (variable play) mode. If in auto edit mode (AUTO indicator lit), pressing this switch twice in succession initiates review mode. PLAY indicator flashes during review operation (see paragraph 7-9).
8	STOP switch/ indicator	Pressing STOP initiates stop mode of operation which overrides all other mode commands. Indicator is lit when active.
9	RECORD switch/ indicator	When pressed simultaneously with PLAY, initiates record mode of operation. Lit when active. PLAY indicator remains on during record in-and-out transitions.

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Table 3-6. Secondary Controls

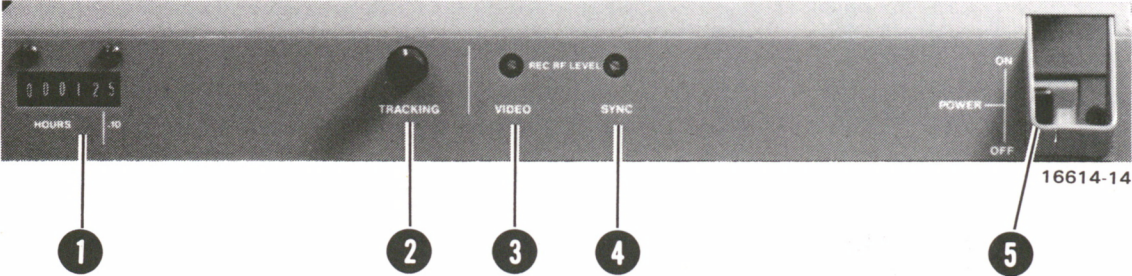
		
Index No.	Description	Function
1	HOURS (Head Hour meter)	A digital counter that indicates the cumulative number of hours the scanner has been on with tape tension. The meter is located above the Audio 3/4 meter. Counter steps every six minutes with an audible click. Maximum indication is 99999.9 hours.
2	TRACKING control	Enabled only in PLAY mode with control track present and inhibited when either the AST or the editor is on. Provides adjustment of capstan servo to align center of tape rf track with video head. The center detent is unity position in which tracking is preset to a reference vertical phase.
3	VIDEO REC RF LEVEL control	When in record mode, this adjustment allows the video record rf level to be set. The record level is displayed by the VIDEO/RF/SYNC meter.
4	SYNC REC RF LEVEL control	When the METER SELECT AUDIO 4/SYNC switch is pressed, the sync record rf level may be adjusted. The record level is displayed by the VIDEO/RF/SYNC meter.
5	PWR switch	The primary power switch is located above the right-hand end of the control panel. It is a slide switch: push in for power on, pull out for power off.

Table 3-7. Video Operating Conditions

Operating Mode	Tape		EE	
	Source	Head	Source	Head
Playback/Var Play	Tape	AST	Tape	AST
Edit Playback	Tape	AST	Tape	RH
Record	Tape	AST	EE	AST
Other	Tape	AST	EE	AST
RH = Record Head Other = Shuttle, Stop, Cue				

Table 3-8. Audio 1, 2, 4 Operating Conditions

Operating Mode	Tape		EE	
	Source	Head	Source	Head
Playback/Var Play	Tape	RH	Tape	RH
Edit Playback	Tape	RH	EE	X
Record	Tape	CH	EE	X
Other	Tape	RH	EE	X
Note These conditions apply to Audio 3 when Audio PWA is configured for non time code audio.				
RH = Record Head CH = Confidence Head X = Not Applicable Other = Shuttle, Stop, Cue				

Table 3-9. Audio Operating Conditions

Operating Mode	Tape		EE	
	Source	Head	Source	Head
Playback/Var Play	Tape	RH	Tape	RH
Edit Playback	Tape	RH	Tape	RH
Record Insert	EE	X	EE	X
Record Assemble/Crash	Tape	CH	EE	X
Other	Tape	RH	Tape	RH
Stop/EE*	Tape	RH	EE	X
<p align="center">Note</p> <p align="center">These conditions apply when Audio PWA is configured for time code.</p>				
<p>RH = Record Head CH = Confidence Head X = Not Applicable Other = Shuttle, Stop, Cue * See paragraph 5-8, Audio 3 EE Setup Procedure.</p>				

Table 3-10. Video RF Meter Operating Conditions

Operating Mode	Tape	EE
	Source	Source
Playback/Var Play	RF	RF
Edit Playback	RF	RF
Record	RF	Video
Other	RF	Video
Other = Shuttle, Stop, Cue		

SECTION 4

PREOPERATIONAL PROCEDURES

4-1 PREOPERATIONAL PROCEDURES

This section supplies the operator with information necessary to prepare the VPR-6 for operation. This information consists of descriptions of card-edge controls, an explanation of system and fault indications, and power-up and tape-threading procedures.

4-2 Configuration

The VPR-6 can be configured in response to various editing situations via a series of card-edge controls. These controls are located at the uppermost edges of the PWAs located in the card cage assembly. Access to the card-edge controls is provided by a hinged door at the top of the VPR-6 cabinet (see Figure 4-1). Explanations of the control functions are presented in Table 4-1.

4-3 Power-Up Sequence

The VPR-6 is powered up as follows:

- STEP 1** Push the PWR slide switch in to apply primary power. This switch is located on the right side of the machine, above operator control panel.
- STEP 2** Ensure that the following indications appear on the control panel:
- a. All meters are lit.
 - b. STOP switch/indicator is lit.
 - c. EE indicator is lit.
 - d. Numeric display indicates valid time.
 - e. FAULT indicator is not lit.
 - e. SYSTEM indicator is not lit.
- STEP 3** In the event of an invalid response from items a, b, c, or d, notify qualified service personnel.
- STEP 4** If FAULT indicator is lit, press FAULT switch to display a numerical indication of the fault (error code) on the cue point/diagnostics display. Refer to paragraph 4-4 for a description of FAULT switch operation.

General classes of error codes are listed in Table 4-2 and on a label located inside the scanner door. Explanations of specific error codes are supplied in the *VPR-6 Service Manual* (Ampex Catalog No. 1809634).

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Depending on the error code displayed, it may be necessary to notify qualified service personnel to initiate corrective action.

- STEP 5 If SYSTEM indicator is lit, press SYSTEM switch to display operating limitation error code on the cue point/diagnostics display. Refer to paragraph 4-4 for a description of SYSTEM switch operation.

Explanations of specific system error codes are provided in Table 4-2 and on a label located inside the scanner door. Depending on the error code displayed, it may be necessary to notify qualified service personnel to initiate corrective action.

4-4 Fault and System Indicators

When the VPR-6's self-test logic detects an error condition, either the FAULT or SYSTEM indicators will light. Pressing the lighted switch causes the numerical indication of the error (error code) to appear on the cue point/diagnostics display.

Note that if multiple errors are detected, individual error codes are queued for display. The error queue is not prioritized—the codes are displayed in the reverse order from which they were detected. The FAULT or SYSTEM switch should be pressed after each error has been cleared to allow possible additional error codes to be displayed.

4-5 Servo Condition Display

When the SERVO switch is pressed, the condition of all servos is displayed on the cue point/diagnostics display. Each digit represents an individual servo, as follows:

(X) (X) (edt opt) (ast) (arm pos) (ctl trk) (capstan) (scanner)

1 = servo locked

0 = servo unlocked

4-6 Tape Threading

Thread tape as follows:

- STEP 1 Open hinged transport cover assembly (see Figure 4-2).
- STEP 2 Open hinged audio head cover.
- STEP 3 Place takeup reel supplied with VTR on takeup turntable.
- STEP 4 Place reel of "A" wind, one-inch videotape on supply turntable.
- STEP 5 Draw 1.5 meters of leader tape from the supply reel and thread tape transport as shown in Figure 4-3. If end of tape is wrinkled, trim it with scissors before threading.
- STEP 6 Wind three or four turns of tape around takeup reel until tape is securely fastened.

- STEP 7 Turn takeup reel counterclockwise until all slack is removed from the tape.
- STEP 8 Verify that tape is threaded as shown in Figure 4-3.
- STEP 9 Close hinged audio head cover.
- STEP 10 Close hinged transport cover assembly.

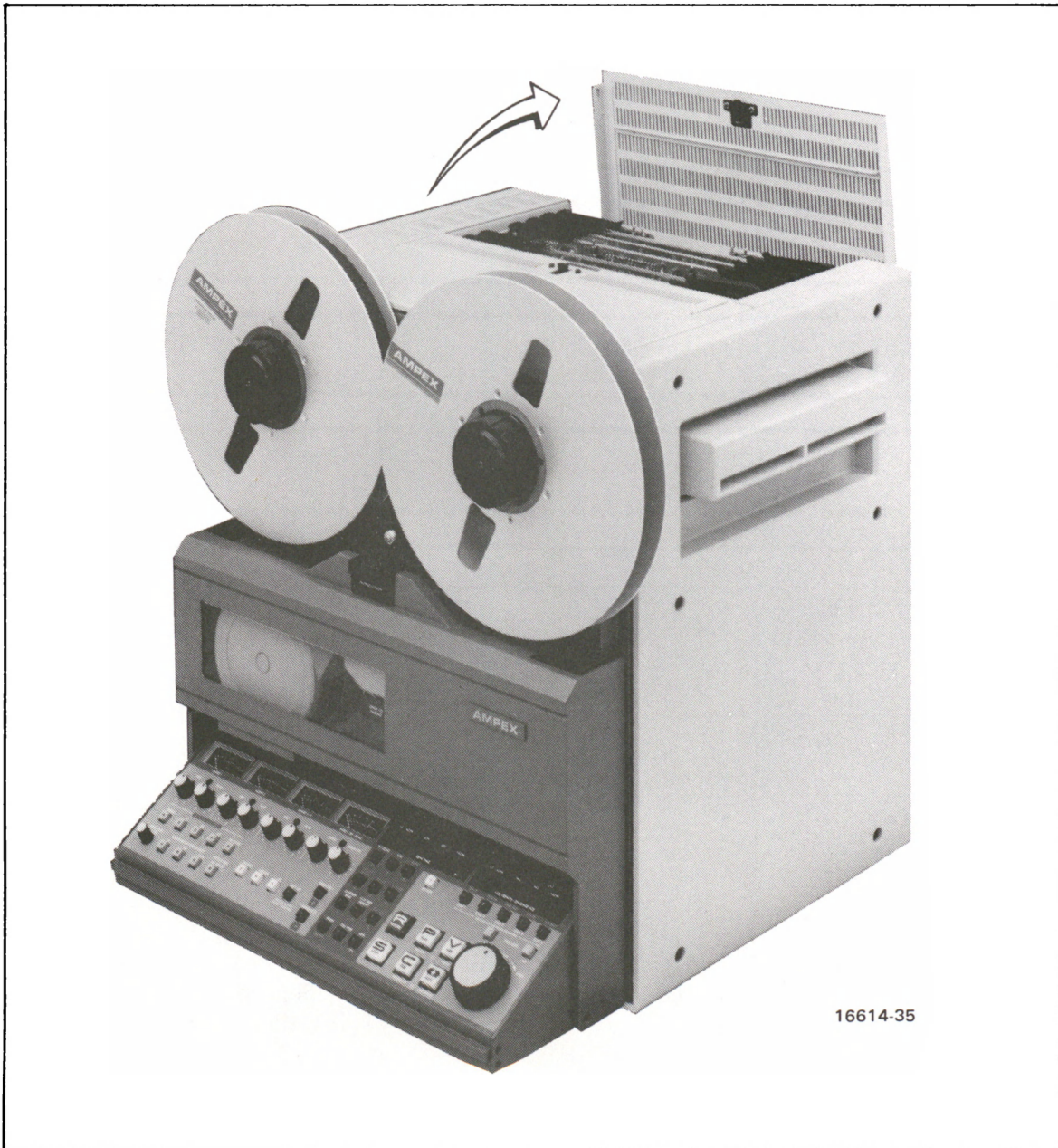


Figure 4-1. Card Edge Control Access

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Table 4-1. Card-Edge Control Settings

Index No.	Reference Designator	Control	Function
1	PWA6, S1	SCANNER PHASE switch	An 8-section DIP switch; S1-1 is LSB: closed position is active. Sections 1 through 6 must be set to provide the offset timing required by the particular TBC used. Six-bit word represents TBC lead time in 1/2 H steps.
2	PWA4, S2	A4/SYNC switch	Selects either sync channel or fourth audio channel, depending on which accessory is installed.
3	PWA1, R94	DG CONT potentiometer	Provides differential gain adjustment for video channel playback.

Table 4-2. Fault and System Indications

Fault Indication*	PWA or Subassembly
100-xx 101-xx 102-xx 103-xx 104-xx 105-xx 106-xx 107-xx 108-xx 110-xx 111-xx 112-xx 113-xx	AST Servo PWA AST Driver PWA Control PWA Servo PWA Reference PWA Parallel Remote PWA Serial Remote PWA Time Code Reader/ Generator PWA Power Supply Assembly Control Panel Audio PWA Equalizer/Demodulator PWA Modulator PWA
* Refer to <i>VPR-6 Service Manual</i> for explanation of -xx.	
System Indication	Operating Limitation
01 02 03 04 05 06 07	REFERENCE ABSENT Input reference absent; or input reference present with REF SELECT switch on Control PWA in INPUT position. VIDEO ABSENT Video input absent; or video input present with REF SELECT switch on Control PWA in REF position. REF AND VIDEO ABSENT Station reference and video input both absent at I/O connector panel (refer to <i>VPR-6 Installation and Routine Maintenance</i> manual, Ampex Catalog No. 1809648-01). RF ABSENT No playback video rf. CTL TRACK ABSENT Control track absent during edit play. SERVOS NOT LOCKED One or more servos are not locked prior to an edit. CTL TRACK NOT LOCKED Control track servo not locked in play mode or insert edit mode.

(Continued next page)

Table 4-2. Fault and System Indications (Continued)

System Indication	Operating Limitation
08	NOT FIELD MATCHED After an edit optimize sequence the video head is centered on the wrong track.
09	NOT COLOR FRAMED The servos have attempted to achieve color-framed playback for 10 seconds without success.
10	EDIT PHASE RANGE EXCEEDED Valid in edit play only. The phase error between reference video and tape video exceeds +/-10 microseconds.
11	SCANNER STALLED Self-explanatory.
12	AUTO RECORD-EDITOR OFF The operator has tried to initiate auto record with the editor off.
13	NOT CUED The operator has tried to initiate auto record without first cueing the VTR.
14	EXIT BEFORE ENTR This indication is given if an auto edit recording is attempted when the exit point is before the entrance point.
15	UNABLE TO EDIT OPTIMIZE When performing edit optimization (see paragraph 7-2) SERVO indicator is lighted for the duration (about 15 seconds) of the automatic procedure. If the video timing on the tape is outside the tolerance range for rephasing the scanner tach, the edit optimization procedure is terminated and this indication is given (see Table 3-3, Index No. 12).
16	MANUAL TRACKING DISABLED This indication is given when an attempt is made to adjust the TRACKING control (refer to Table 3-6, Index No. 2) while the control is disabled (i.e., in record mode, in edit mode, or any time AST is on).

(Continued next page)

Table 4-2. Fault and System Indications (Continued)

System Indication	Operating Limitation
17	HI LINE This indication is given if the ac line input is higher than the voltage for which the line voltage select jumpers are installed (refer to <i>VPR-6 Installation and Routine Maintenance</i> manual). Momentary surge in line voltage can also cause this indication.
18	LO LINE This indication is given if the ac line input is lower than the voltage for which the line voltage select jumpers are installed (refer to <i>VPR-6 Installation and Routine Maintenance</i> manual). Momentary dip in line voltage can also cause this indication.
19	STORED DATA LOST If this indication is displayed automatically following power-up (SYSTEM switch not pressed), the Control PWA's stored data was lost. If this indication is displayed as a result of pressing the SYSTEM switch following power-up, the Servo PWA's stored data was lost.
20	PWR SUPPLY OVERTEMP This indication is given if overtemperature conditions are detected in the power supply assembly. It is not a failure (fault) indication and will not cause automatic power supply shutdown. Rather, it is a warning to the operator that the power supply is overheating, and the cause should be investigated at the next opportunity.
21	TAPE NOT IN PATH Tape is not threaded through the tape-in-path sensor on the timer idler assembly.
22	CUE NOT FOUND This indication is given if a cue attempt is unsuccessful.
23	NOT SYNCHRONIZED The VPR-6 was unable to synchronize during an auto edit runup.
24	UNABLE TO RESOLVE EDIT PHASE ERROR Self-explanatory. Indication results from an unsuccessful attempt to edit optimize.

(Continued next page)

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Table 4-2. Fault and System Indications (Continued)

System Indication	Operating Limitation
25	AUDIO NOT JUMPERED FOR TIME CODE A setup procedure for time code was attempted with the Audio PWA incorrectly configured (see <i>VPR-6 Service Manual</i>).



Figure 4-2. VPR-6 with Transport Cover Lowered

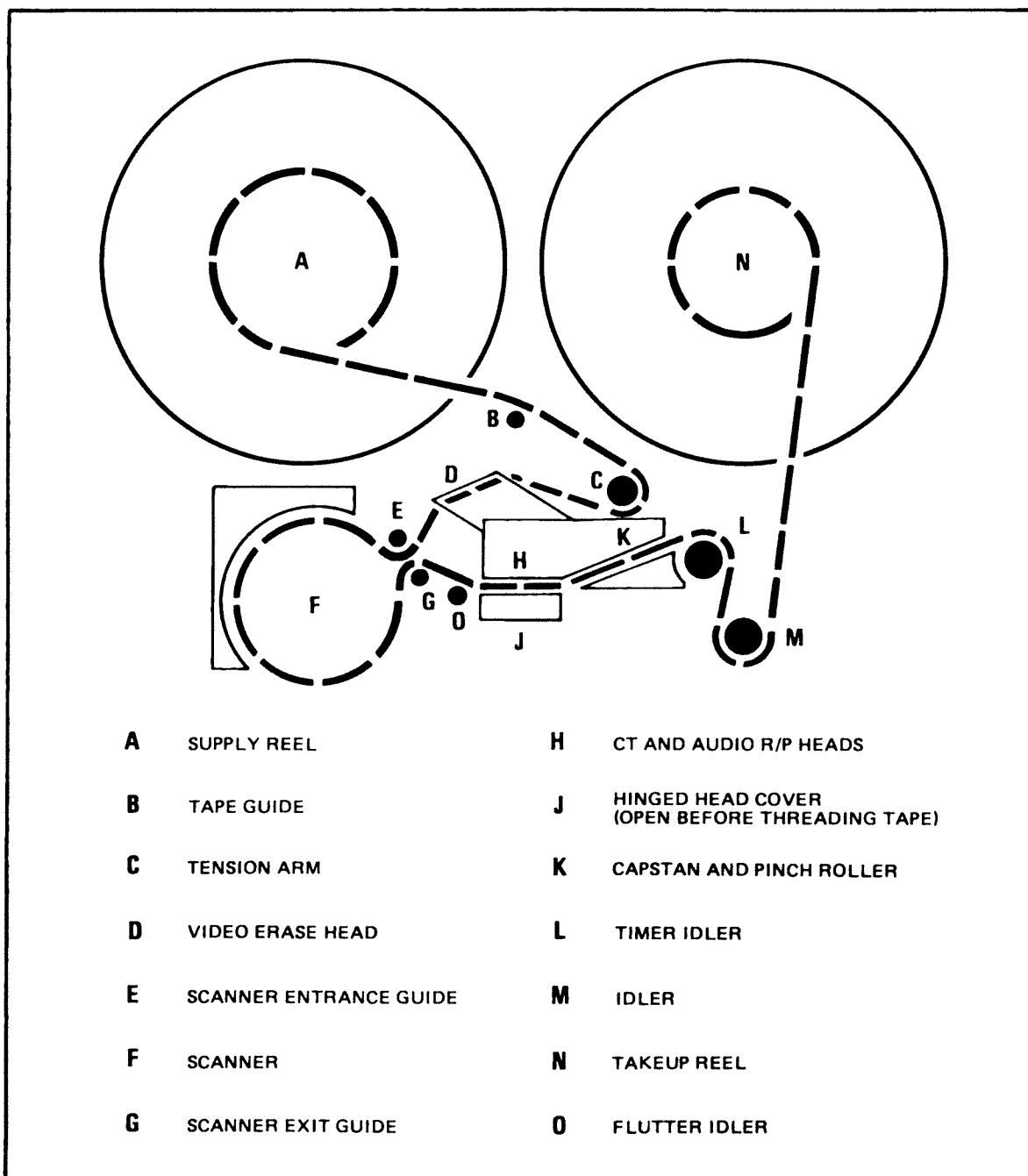


Figure 4-3. Tape Threading Path

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4-7 Video Head Optimization

Video head optimization (VHO) should be done whenever:

- A different type of magnetic tape is used for recording.
- The video record head is replaced.
- Compensation for video head wear is needed.

Proceed as follows:

STEP 1 Thread VPR-6 with the type of tape to be used for next recording.

STEP 2 Connect video signal input to VIDEO IN connector on rear panel.

STEP 3 Power-up VPR-6. Be sure METER SEL switch is not lighted.

STEP 4 Place the VPR-6 in record mode (see paragraphs 6-7 and 6-8).

STEP 5 Adjust the left (VIDEO) REC RF LEVEL potentiometer on the Secondary Control Panel, for maximum RF reading on the VIDEO/RF/SYNC meter on the Primary Control Panel.

- For a VPR-6 without sync option, this completes VHO adjustment. Press STOP.
- For machines with sync option, leave record mode active and continue with steps 6, 7, and 8.

STEP 6 Press METER SEL switch on Primary Control Panel.

STEP 7 Adjust the right (SYNC) REC RF LEVEL potentiometer on the Secondary Control Panel, for maximum indication on the VIDEO/RF/SYNC meter on the Primary Control Panel.

STEP 8 Press STOP.

SECTION 5

SETUP MODES

5-1 OPERATOR SETUP MODES

All setup modes are entered via the **SETUP** switch. Setup modes available to the operator/tape editor are listed in Tables 5-1 and 5-2.

All VPR-6 and time-code reader generator/character generator setup mode procedures are arranged in the following basic format:

- STEP 1** Press **SETUP**. **SETUP** indicator will begin to flash, indicating that keypad is configured to access the various setup modes.
- STEP 2** Enter the number shown opposite the desired setup mode in Tables 5-1 and 5-2. Note that each setup mode has an identifying number assigned to it.
- STEP 3** Press **ENTER**. The VPR-6 is now in the selected setup mode. The mode ID number (entered in step 2) will appear on the cue point/diagnostics display, followed by a dash and a second number. This second number indicates the current condition of the setup (e.g., on/off) and is the one whose value is changed to effect a change in the setup.
- STEP 4** Use keypad to modify setup as indicated by individual setup procedures. See paragraphs 5-3 through 5-21 and 5-23 through 5-33.
- STEP 5** Press **ENTER**. The setup modification is now entered into VPR-6 memory.
- STEP 6** When performing a series of setup procedures, press **STOP** to exit current setup. A new setup procedure can now be entered and modified by following steps 2 through 5 above. Press **SETUP** to exit all setup modes and return keypad switches to their primary functions (see Table 3-3).

Note

Setup mode procedures are also supplied on a set of operation cards located inside the lower transport cover assembly.

5-2 VTR Setup Procedures

Note

The majority of setup procedures are identical, the only variations being the individual values entered in steps 2 and 4. Following paragraphs show values unique to each setup procedure, as well as explanations of any departures from the basic format.

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Table 5-1. VPR-6 Setup Modes

ID Code	Description
1	AST on/off (see paragraph 5-3)
2	Remote 1 input selection (see paragraph 5-4)
3	End of-tape on/off (see paragraph 5-5)
4	Display percentage of play speed (see paragraph 5-6)
5	Edit field selection (see paragraph 5-7)
6	Audio 3 EE (see paragraph 5-8)
7	Audio spot erase (see paragraph 5-9)
8	TBC variable play range (see paragraph 5-10)
9	Synchronize play (see paragraph 5-11)
10	Tape timer preset (see paragraph 5-12)
11	Preroll A preset (see paragraph 5-17 and 5-18)
12	Preroll B preset (see paragraph 5-19 and 5-20)
13	VTR ID preset (see paragraph 5-31)
14	Tape timer frame count (see paragraph 5-13)
15	Color framer lock (see paragraph 5-14)
16	Reference select (see paragraph 5-15)

Table 5-2. Time-Code Generator Setup Modes

ID Code	Description
20	Preset time-code generator time (see paragraph 5-23)
21	Preset user bits (see paragraph 5-31)
22	Time-code source selection (see paragraph 5-24)
23	Run mode (see paragraph 5-25)
24	Frame count selection (see paragraph 5-26)
25	User bit mode binary/ASCII (see paragraph 5-32)
26	Parity on-off
30	Character generator display selection (see paragraph 5-27)
31	Character size selection (see paragraph 5-28)
32	Background selection (see paragraph 5-29)
33	Character position selection (see paragraph 5-30)

5-3 AST On/Off

Automatic Scan Tracking (AST) utilizes an adjustable head to insure optimum head-to-track alignment during playback. Turn the AST feature on or off as follows:

STEP 2 Enter 1 on the keypad.

STEP 4 Enter **1** to turn AST on.
Enter **2** to turn AST off.

5-4 Remote 1 Input Selection

Select the remote control (REM 1) input source as follows:

STEP 2 Enter **2** on the keypad.

STEP 4 Enter **1** to select simple remote control.

Enter **2** to select parallel remote control (Parallel Remote Control PWA is enabled).

Enter **3** to select parallel remote control (Parallel Remote Control PWA is enabled with color framer forced on).

Enter **4** to select serial remote control (Serial Remote Control PWA is enabled).

Note

Simple remote control may be continuously activated by preceding each input value in step 2 with the number 1 (i.e., 11, 12, 13, 14).

5-5 End-of-Tape On/Off

End-of-tape sensing ensures that tape cannot be accidentally run off the reels in either direction, even at shuttle speeds. Turn end-of-tape sensing on or off as follows:

STEP 2 Enter **3** on the keypad.

STEP 4 Enter **1** to turn on end-of-tape sensing.

Enter **2** to turn off end-of-tape sensing.

Enter **3** to enable reverse-only end-of-tape sensing.

CAUTION

IF END-OF-TAPE SENSING IS TURNED OFF, TAPE CAN BE UN-THREADED WITH THE SCANNER RUNNING AT FULL SPEED. WITH SCANNER AT FULL SPEED, WRINKLED OR DAMAGED TAPE ENDS COULD CAUSE DAMAGE TO THE VIDEO HEADS.

5-6 Display Percentage of Play Speed

The percentage of play speed, selected by the transport control knob, is displayed by the cue point/diagnostics display. Select operating modes in which this feature is enabled as follows:

STEP 2 Enter **4** on the keypad.

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- STEP 4 Enter **0** to enable display in variable play mode only.
Enter **1** to enable display in variable play or play modes.
Enter **2** to disable display.

5-7 Edit Field Selection

Select whether editing is done on Field 1 or Field 2 as follows:

- STEP 2 Enter **5** on the keypad.
- STEP 4 Enter **1** to edit on Field 1.
Enter **2** to edit on Field 2.

5-8 Audio 3 EE

Select operating modes in which audio channel 3 uses the EE signal as an input source as follows (applicable only if Audio PWA is configured for time code; see VPR-6 Service Manual):

- STEP 2 Enter **6** on the keypad.
- STEP 4 Enter **1** to enable audio 3 EE in record mode only.
Enter **2** to enable audio 3 EE in record or stop-EE modes (see Table 3-9).

5-9 Audio Spot Erase

This setup varies slightly from the basic format in steps 5 and 6. Spot-erase a selected audio channel as follows:

- STEP 2 Enter **7** on the keypad. All channels are now record-inhibited and their indicators (VIDEO, A1-A4/SYNC) are lit. RECORD light flashes, READY indicator is lit, EE indicator is off, and the scanner is on.
- STEP 4 Press desired audio channel switch (A1, A2, A3, A4). Selected channel is now placed on the audio monitor.
- STEP 5 Determine area to be erased via the JOG switches or by moving takeup reel manually. Hold RECORD switch down as area passes over erase heads.
- STEP 6 Press STOP or SETUP to exit. Note that you cannot continue to another setup mode from this procedure. Exit and go to step 1 of the desired setup.

5-10 TBC Variable Play Range

The variable play speed range of the VPR-6 can be adjusted to match the capabilities of various time-base correctors or to limit the forward variable play range to normal play speed. Match the play speed range to an individual TBC as follows:

STEP 2 Enter **8** on the keypad.

STEP 4 Enter **0** to select a TBC-6 with a variable play speed range of -1.0 to 3.0.

Enter **1** to select a TBC-3 or Zeus with a variable play speed range of -1.0 to +3.0.

Enter **2** to select a TBC-6 with a variable play speed range of -1.0 to +1.0.

Enter **3** to select a TBC-3 or Zeus 3 with a variable play speed range of -1.0 to +1.0.

Enter **4** to select a TBC-80 or TBC-2 with a variable play speed range of -0.25 to +1.5.

Enter **5** to select a TBC-80 or TBC-2 with a variable play speed range of -0.25 to +1.0.

Enter **6** to select a TBC-40 with variable play inhibited.

5-11 Synchronize Play

Synchronize the tape to reference vertical during runup as follows:

STEP 2 Enter **9** on the keypad.

STEP 4 Enter **1** to enable play/record synchronized runup in auto or remote 2 modes only.

Enter **2** to enable play/record synchronized runup in all modes.

5-12 Tape Timer Preset

Load a new value into the tape timer as follows:

STEP 2 Enter **10** on the keypad.

STEP 4 Use keypad to enter the desired tape time in hours, minutes, seconds, and frames. Use backspace (arrow) switch to correct errors in the keypad entry.

5-13 Tape Timer Frame Count

Select either full frame or drop frame count as follows:

STEP 2 Enter **14** on the keypad.

STEP 4 Enter **1** to select full frame count.
Enter **2** to select drop frame count.

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5-14 Color Framer Lock

Select color frame lock sequence as follows:

STEP 2 Enter 15 on keypad.

STEP 4 Enter 2 for 2-field lock.

Enter 4 for 4-field lock (NTSC color framer on).

Enter 8 for 8-field lock (PAL color framer on).

5-15 Reference Select

Select video reference as follows:

STEP 2 Enter 16 on keypad.

STEP 4 Enter 0 for automatic reference select.

Enter 1 to select reference video.

Enter 2 to select input video.

5-16 Preroll A Preset—Editor Off

Set "A" preroll with editor off time as follows:

STEP 2 Turn editor off via INSERT or ASSEMBLE. Enter 11 on keypad.

STEP 4 Use keypad to enter a new preroll "A" time (editor off) in minutes, seconds, and frames.

5-17 Preroll A Preset—Editor On

Set "A" preroll with editor on-time as follows:

STEP 2 Turn editor on via INSERT or ASSEMBLE. Enter 11 on keypad.

STEP 4 Use keypad to enter a new preroll "A" time (editor on) in minutes, seconds, and frames.

5-18 Preroll B Preset—Editor Off

The "B" preroll editor off-time is set as follows:

STEP 2 Turn editor off via INSERT or ASSEMBLE. Enter 12 on keypad.

STEP 4 Use keypad to enter a new preroll "B" time (editor off) in minutes, seconds, and frames.

5-19 Preroll B Preset-Editor On

The "B" preroll editor on time is set as follows:

STEP 2 Turn editor on via INSERT or ASSEMBLE. Enter **12** on keypad.

STEP 4 Use keypad to enter a new preroll "B" time (editor on) in minutes, seconds, and frames.

5-20 VTR ID Preset

Assign the VPR-6 a new machine ID number as follows:

STEP 2 Enter **13** on the keypad.

STEP 4 Use keypad to enter the new ID number. The number may be any value between 0000 and 9999. Use backspace (arrow) switch to correct errors in keypad entry.

5-21 Time-Code Reader Generator/Character Generator Setup Procedures**Note**

The majority of setup procedures are identical, the only variations being the individual values entered in steps 2 and 4. Values unique to each setup procedure are given in the following paragraphs, as well as explanations of any departures from the basic format.

5-22 Preset Time-Code Generator Time

The time-code generator (TCG) time is preset as follows:

STEP 2 Enter **20** on the keypad.

STEP 4 Use keypad to enter the new time in minutes, seconds, and frames.

5-23 Time-Code Source Selection

Select the input source for the time-code generator as follows:

STEP 2 Enter **22** on the keypad.

STEP 4 Enter **1** to select the internal TCG (internal time code and user bits).

Enter **2** to select external TCG (external time code and user bits).

Enter **3** to select jam mode. In jam mode, the VPR-6 will read off-tape time code (via audio channel 3) up to an edit point. This provides a starting point for a continued time-code count at beginning of the newly edited material. Jam mode is only used in Audio 3 edit record mode (off-tape time code and internal user bits).

Enter **4** to select slave mode. In this mode, the internal generator is synchronized (slaved) to an external TCG (external time code and internal user bits).

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5-24 Run Mode

Select the time-code generator operating mode as follows:

STEP 2 Enter **23** on the keypad.

STEP 4 Enter **1** to select run mode (TCG runs continuously).

Enter **2** to select hold mode (TCG halted until audio channel 3 is placed in record mode, then runs continuously).

Enter **3** to select the sequence mode (TCG locked to audio channel 3; runs when channel 3 is in record mode, halted in all other modes).

5-25 Frame Count Selection

Select either full frame or drop frame count as follows:

STEP 2 Enter **24** on the keypad.

STEP 4 Enter **1** to select full frame count.

Enter **2** to select drop frame count.

5-26 Character Generator Display Selection

Select the character generator display mode as follows:

STEP 2 Enter **30** on the keypad.

STEP 4 Enter **0** to turn off character display.

Enter **1** to display tape timer time (TTM).

Enter **2** to display time-code reader time (TCR).

Enter **3** to display time-code reader user bits (USR).

Enter **4** to display time-code generator time (TCG).

Enter **5** to display time-code generator user bits (USG).

Enter **6** to display selected time and edit point register. If TCR switch on keypad (see Table 3-3, Index No. 3) is enabled and its indicator is lit, time-code reader time will be displayed. If the TCR switch is off (indicator not lit) then tape timer time will be displayed. As long as VPR-6 is not yet in edit interval, entrance edit point will be displayed immediately under the time. Once in edit interval, the exit edit point will be displayed. The various display combinations appear as follows:

TCR	TCR	TTM	TTM
ENT	EXT	ENT	EXT

Enter **7** to display time-code reader time over the time-code reader user bits:

TCR
USR

Enter **8** to display time-code generator time over the time-code generator user bits:

TCG
USG

Enter **9** to display time-code reader time over the tape timer time:

TCR
TTM

5-27 Character Size

Select size of the characters displayed by the character generator as follows:

STEP 2 Enter **31** on the keypad.

STEP 4 Enter **1** to select large characters.

Enter **2** to select small characters.

5-28 Background Selection

Select the character generator background as follows:

STEP 2 Enter **32** on the keypad.

STEP 4 Enter **1** to select a black background.

Enter **2** to select a white background.

5-29 Character Position

Select the position of the characters on the monitor as follows:

STEP 2 Enter **33** on the keypad. **33-0** appears on cue point/diagnostics display.

STEP 4 Enter **1** to adjust the character position vertically. Position characters using the transport control knob.

Enter **2** to adjust the character position horizontally. Position characters using the transport control knob.

5-30 Preset User Bits

Preset the time-code reader user bits as follows:

STEP 2 Enter **21** on the keypad.

STEP 4 User bits are displayed in the following pattern:

XX XX XX XX

Each pair of bits corresponds to a character and is accessed via one of the CUE switches. The pair of bits furthest to the left is accessed by pressing the CUE 1 switch, with the remaining pairs being accessed (from left to right) by pressing CUE 2 through CUE 4, respectively.

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- STEP 5 Once the desired pair of bits has been accessed, use the transport control knob to modify the displayed value. Turning the knob clockwise increases the value, turning it counterclockwise decreases the value.

Note

When using ASCII values, the selectable range is from 00 to 7F. When using binary values, the selectable range is from 00 to FF (see paragraph 5-32).

- STEP 6 For each pair of bits to be modified, repeat steps 4 and 5.
- STEP 7 When all user bits have the desired values, press **ENTER** to transfer the presets to the time-code reader/generator.
- STEP 8 Press **STOP** to exit the current setup and allow selection of a new setup procedure. Press **SETUP** to exit the setup mode and return keypad switches to their primary functions.

5-31 User Bit Mode—Binary/ASCII

Select either binary or ASCII values for the user bits as follows:

- STEP 2 Enter **25** on the keypad.
- STEP 4 Enter **1** to select binary values.
Enter **2** to select ASCII values.

5-32 Time Code Generator—Parity

Select parity as follows:

- STEP 2 Enter **26** on keypad.
- STEP 4 Enter **1** to select parity off.
Enter **2** to select parity on.

SECTION 6

OPERATION

6-1 MODES OF OPERATION

The VPR-6 is operated in one of four basic modes: stop, record, playback, and shuttle. Various conditions can be established that enable specific functions, such as: still-frame, slow-motion playback, editing, and unthread. All modes of operation can be initiated either locally on the operator control panel or from a remote control accessory. Any mode of operation can be terminated by initiating any other basic mode; it is not necessary to enter stop mode before entering another mode. The following paragraphs describe each basic mode and its conditions of operation.

6-2 Stop Mode

When power is initially applied to the VPR-6, the machine is automatically in stop mode. Stop mode has two conditions: standby and ready.

6-3 Standby Condition

In standby condition, all motors are stationary, reel brakes are engaged, and tape is not under tension. The VPR-6 is automatically placed in stop mode/standby condition when power is first applied, at end-of-tape, and as the result of certain malfunctions. If the operator presses one of the basic mode switches while the VTR is in stop mode/standby condition, the scanner motor will immediately start. However, the selected mode cannot be entered until the scanner motor reaches near-synchronous speed.

6-4 Ready Condition

After tape is threaded, the VTR can be placed in ready condition (from standby condition, by pressing the READY switch. The READY and SERVO indicators will light and the scanner motor will start and come up to speed. Ready condition is achieved when the scanner motor reaches lock speed. At that time, the lighted SERVO indicator goes out. From the ready condition, the VTR can be commanded to immediately enter any other mode.

6-5 Still-Frame Operation

Assuming that the tape has been threaded and the VPR-6 is in stop mode/ready condition, switching from EE to tape produces still-frame playback on the video monitor. The video head on the scanner continuously reads the same helical scan on the tape. The time-base corrector artificially generates a two-field frame that is routed to the video monitor (see Table 3-3, Index No. 8). This method of still-frame operation is exited by pressing the EE switch/indicator to return to EE operation.

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After approximately 4 minutes of still-frame operation, tape tension is relaxed. After the first 3-1/2 minutes of still-frame operation, the READY indicator flashes, indicating still-frame operation will terminate in approximately 30 seconds. To continue still-frame operation beyond that interval, press READY. This resets the 4-minute timer. If it is known in advance that more than 4 minutes of still-frame operation will be needed, it is not necessary to wait for the READY indicator to flash; press STOP at any time to recycle the 4-minute timer.

6-6 Record Mode

All normal recording and editing operations are functions of the record mode. In normal (non-edit) recordings, all record heads are active and all tracks are recorded. Recording on individual, selected tracks is considered an editing operation.

Two types of edits are possible with the VPR-6: insert and assemble. An insert edit consists of re-recording a segment of an existing recorded track, while retaining the original control track to ensure continuous sync. In an assemble edit, new material is added to the end of an existing recording and a new control track is recorded.

Auto edit recordings are described in paragraphs 7-3 through 7-9. Manual edit recording is described in paragraphs 7-11 through 7-13.

6-7 Record Level Adjustments

The following procedure assumes that preoperational procedures described in paragraphs 4-1 through 4-6 have been followed, and that proper audio and video connections have been made (see *VPR-6 Installation and Routine Maintenance*, Ampex Catalog No. 1809648-01). Set up recording levels as follows:

- STEP 1 Press EE switch. EE indicator lights.
- STEP 2 Observing the VIDEO/RF meter, adjust the VIDEO RECORD control for the standard recording level (1.0 Vp-p is normal).
- STEP 3 Assuming that a station reference audio tone is applied at the AUDIO 1 IN connector, adjust the channel 1 AUDIO RECORD control for an indication of 0 VU while observing the AUDIO 1 (vu) meter. If no reference tone is available, adjust the channel 1 AUDIO RECORD control for an average meter indication of -4 VU.
- STEP 4 Repeat step 3 for audio channel 2.
- STEP 5 Repeat step 3 for audio channel 3. If time code is connected to the AUDIO 3 IN connector, adjust for an indication of +2.6 VU.
- STEP 6 Repeat step 3 for audio channel 4, if installed.

The VPR-6 is now ready to begin recording.

6-8 Non-Edit Recording

Non-edit (normal) recording mode is initiated as follows:

- STEP 1 Perform record level adjustments (refer to paragraph 6-7).
- STEP 2 Ensure that AUTO, INSERT, ASSEM, and REC LOCKOUT indicators are off.
- STEP 3 Press PLAY and RECORD simultaneously to begin recording.

6-9 Playback Mode(s)

The playback mode includes still-frame playback, normal speed playback, and variable speed playback. For still-frame playback operation refer to paragraph 6-5. For normal and variable-speed playback instructions, see the following paragraphs, which assume that preoperational procedures (of paragraphs 4-1 through 4-5 have been followed.

Variable-speed playback ranges depend on the choice of time-based corrector (see paragraph 5-10). Variable speed playback is enhanced by the AST feature and the time-based corrector accessory, both of which enable the VPR-6 to provide broadcast quality without noise bars and picture breakup.

6-10 Playback Setup

It is recommended that test signals be recorded at the beginning of a tape. Test signals should be played back while the following parameters are verified and, if necessary, adjusted: autochroma or manual equalization, differential gain, and color framer.

Monitor the audio meters during playback of prerecorded program material. No adjustment of the AUDIO PLAY controls should be made, unless it is obvious that the tape was recorded at a nonstandard level (evidenced by overdriving of the meters). Adjust the AUDIO PLAY controls as necessary, to produce an average meter indication of -4 VU for program material.

6-11 Normal Playback

Normal (non-edit) playback mode is initiated by pressing PLAY. Prerecorded material can then be viewed on the monitor.

6-12 Tape Speed Override

When the VPR-6 is part of a centrally controlled editing system, the VTRs in the system are synchronized by the central edit controller. The TSO advance and retard switches provide local control for synchronization. These momentary contact switches are enabled in play mode. While depressed, they provide a 7-percent increase or decrease in tape speed. Synchronization is achieved by advancing or retarding the playback tape speed of one VTR, until the indicated tape time, picture, or audio matches the other(s).

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6-13 Variable-Speed Playback

Variable-speed playback mode is initiated by pressing VAR PLAY. The transport control knob is then rotated to control tape play speed as desired. Tape speed is continuously variable throughout a range that includes still frame, but whose maximum limits depend on TBC capability (see paragraph 5-10). The STOP position on the transport control knob represents zero tape motion. When the knob is rotated to play speed, the PLAY indicator lights.

6-14 Pause

Pause capability enables tape travel to be stopped when in variable-play mode and restarted at the same tape speed. This makes "pause" a convenient means of stopping the tape in variable play mode, while the tape editor takes note of tape time or makes other editing decisions. Pressing VAR PLAY/PAUSE switch twice in succession causes the tape to stop and the indicator to flash. Pressing VAR PLAY/PAUSE again restarts tape travel at the same variable speed (see Table 3-5, Index No. 2).

6-15 Shuttle Mode

Tape can be moved forward or reverse, at speeds approaching 500 in./s (1270 cm/s), using the SHUTTLE switch and the transport control knob. Pressing the SHUTTLE switch places the VPR-6 in shuttle mode and lights the SHUTTLE indicator. Rotating the transport control knob then in either direction moves the tape in the desired direction at the selected speed.

The transport control knob's STOP position represents zero tape movement. Tape can be shuttled forward and backwards at a speed proportional to the amount the knob is rotated. End-of-tape (EOT) sensing prevents tape from being shuttled off the reels in either direction (see paragraph 5-5).

6-16 Unthread Command

The Unthread command (a variation of Shuttle mode) causes the tape to be shuttled to the supply reel and unthreaded from the transport.

Pressing the SHUTTLE switch twice in succession activates the Unthread command (see Table 3-5, Index No. 5), and causes the indicator to begin flashing. Tape is rewound at maximum shuttle speed to the EOT point, which is always disabled when the Unthread command is given. When the EOT point is reached, tape motion and the scanner motor slow down. The balance of the tape is gently unthreaded.

If the VPR-6 is in Shuttle mode, press the SHUTTLE switch a second time to initiate the Unthread command.

6-17 Cue

Assuming that cue/edit points were set previously (see paragraph 7-4), press the CUE switch to move tape at shuttle speed to a preroll point ahead of the selected cue/edit point (see Table 3-5, Index No. 6).

To cue to the "A" preroll point, press CUE once. The CUE indicator lights and remains on as tape shuttles to the cue point. When the cue point is reached, CUE indicator goes out and STOP indicator lights.

To cue to the "B" preroll point, press CUE twice in succession. The CUE indicator will flash as the tape shuttles to the cue point. When the cue point is reached, the CUE indicator goes out and the STOP indicator lights.

To cue with no preroll: enter either of the preroll setup procedures (see paragraphs 5-13 or 5-14) and enter a preroll value of zero, then cue to that preroll.

SECTION 7

EDITING PROCEDURES

7-1 EDITING PROCEDURES—INTRODUCTION

The VPR-6 is capable of performing a variety of editing operations in both the auto and manual modes. The auto edit mode allows both insert and assemble edits. Additionally, edits can be split, made open-ended, previewed before recording, and reviewed afterwards. Both insert and assemble edits may also be made manually.

An insert edit replaces an existing segment of audio and/or video information within a continuous recording. New material to be inserted is recorded exactly over the segment it is replacing. Both entrance and exit edit points are preselected and controlled. When performing an insert edit, the operator must select the individual channels of information (audio and/or video) he wishes to replace and inhibit the recording of the other channels.

An assemble edit attaches new material to the end of previously recorded audio/video information. All channels are recorded and the operator is concerned only with controlling the timing of the entrance edit point. The edit must contain enough recorded material to allow the next assemble edit to overlap it slightly.

A technically good edit requires that the new material, whether it is inserted or assembled, be matched as closely as possible to the original material. This matching process is referred to as edit optimization (see paragraph 7-2).

To ensure proper color sequencing, it is recommended that a trial edit recording be made before any editing operations are performed. If, during playback, the trial edit produces a horizontal picture shift at the edit points, the color frame of the video source (VTR or camera) is out of phase with the original material.

Out-of-phase color sequencing is corrected by use of the color framer INVERT switch, located on the keypad (see Table 3-3, Index No. 6). The INVERT switch controls color framer playback phase by allowing either odd or even frame referencing to be selected. When the CLR FMR indicator is off, the playback color frame matches the color frame reference. When the INVERT switch is pressed and its indicator is lit, the playback color frame is inverted in relation to the reference.

Edit recording will be aborted if there is an interruption in the original recording during the runup, or preroll period. The loss of control track will produce SYSTEM indication 05. If one or more servos are not locked prior to the edit, SYSTEM indication 06 will appear. SYSTEM indication 07 is generated if the control track servo is not locked in either play or insert edit record mode. Refer to Table 4-2 for descriptions of the system indications.

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There is normally some picture disturbance when in edit play mode (PLAY and INSERT/ASSEM indicators lit). This disturbance occurs when play mode is initiated with the editor on (INSERT or ASSEM indicator lit). The edit optimization procedure provides additional refinement to edit play operation (see paragraph 7-2 and Table 3-3, Index No. 12).

In non-edit (normal) playback mode, the VTR is normally locked to the station reference input and an offset is applied to the recorder to account for the delay in the time-base corrector. This offset enables the TBC to stay in phase with the station reference.

When in the various edit modes, the VPR-6 video output is phased to the video input, and the TBC is automatically shifted accordingly. Consequently, while in these modes the TBC output will not be in phase with station reference.

7-2 Edit Optimization

It is recommended that the edit optimization procedure be performed once before each editing session. This procedure is initiated via the EDIT OPT switch, located on the keypad (see Table 3-3, Index No. 12). The EDIT OPT switch is enabled only when the VPR-6 is in the edit play mode (PLAY and INSERT or ASSEM indicators lit). Edit optimization automatically applies a tracking correction to the video record head and rephases the scanner tach, synchronizing the scanner to the timing of the off-tape video signal. Edit optimization is performed as follows:

- STEP 1 Press either INSERT or ASSEM (INSERT or ASSEM indicators light).
- STEP 2 Press PLAY. PLAY indicator lights and tape motion begins.
- STEP 3 Press EDIT OPT and FAULT simultaneously. SERVO indicator remains lit during automatic edit optimization (approximately 15 seconds).

7-3 Auto Editing

Auto editing is enabled by pressing the AUTO switch (AUTO indicator lit). The flow chart in Figure 7-1 illustrates the steps required to perform standard and split auto edits in both the assemble (ASSEM) and insert (INSERT) editing modes. Individual steps are further described in paragraphs 7-4 through 7-10.

7-4 Setting Entrance and Exit Edit Points

When the VPR-6 is in auto edit mode, edit points may be set in any of five ways. Edit point values are derived from the following sources:

- Tape timer
- Keypad
- Transfer from another edit point register
- Transfer from a cue point register
- Automatic transfer of exit point to entrance point register

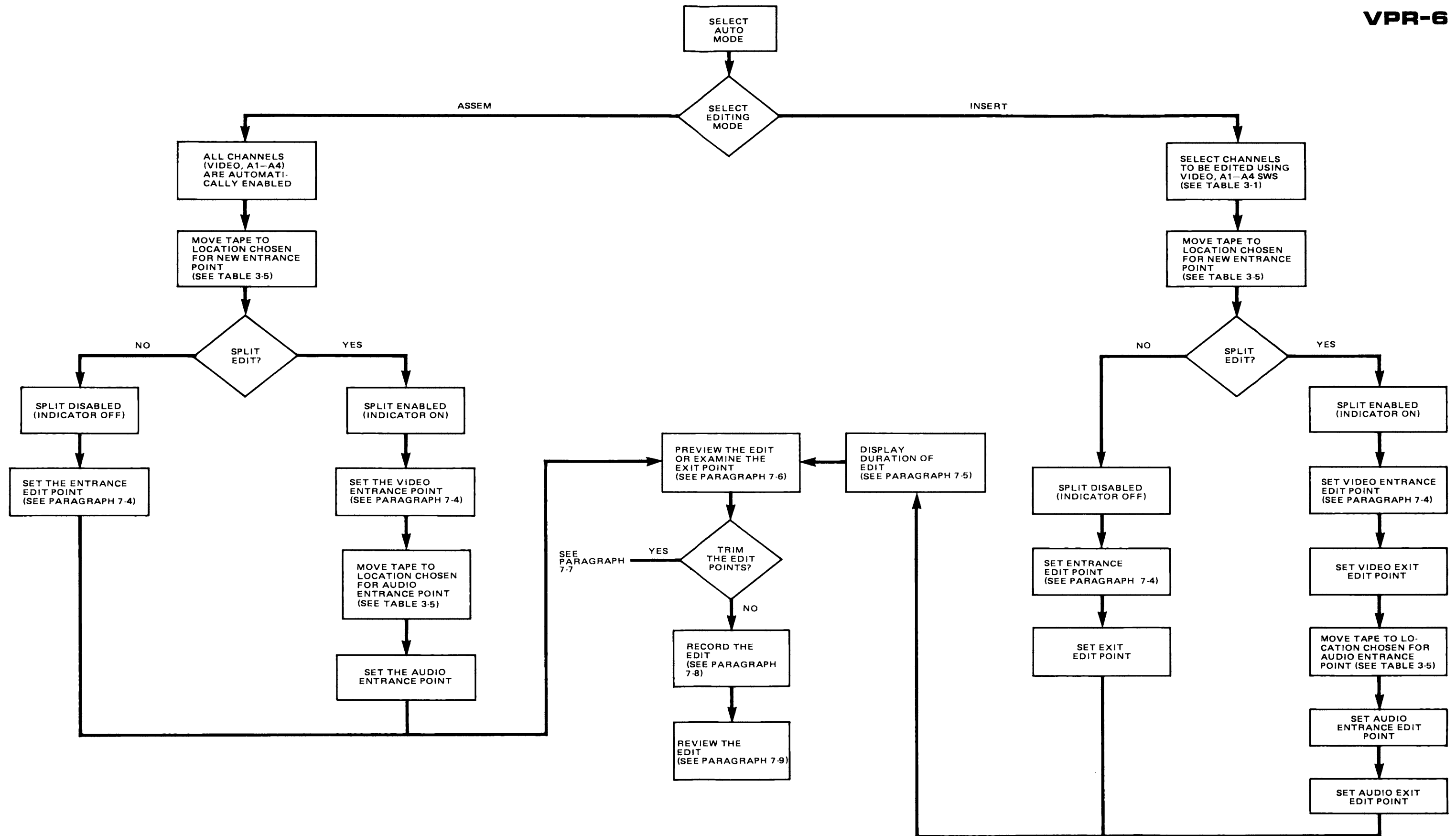


Figure 7-1.
Standard and Split Auto Editing

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The following procedures describe each of the methods available for setting edit points. These procedures assume

- that the VPR-6 is in stop/standby condition,
- that neither the FAULT, SYSTEM, nor SET UP indicator is lit,
- and that neither the video nor any of the audio channels is record-inhibited (see Table 3-1).

Note

When the SPLIT indicator is lit, all edit point registers are enabled independently. When the SPLIT indicator is off, the entrance (AUD IN, VID IN) and exit (AUD OUT, VID OUT) point registers are tied together. For example, pressing the AUD IN switch will automatically enable the VID IN switch as well.

Setting Entrance/Exit Point to Current Tape Time

- STEP 1 Shuttle tape to the desired location, using the transport control knob in VAR PLAY mode. Small adjustments in tape position may be made with the JOG switches. Refer to Table 3-5 for functional descriptions of these controls.
- STEP 2 Enable the desired edit point register by pressing either the VID IN, VID OUT, AUD IN, or AUD OUT switch (see Table 3-4). Indicator lights.
- STEP 3 Press MARK to transfer the value present in the tape time display to the enabled register (see Table 3-3, Index No. 9).

Setting Entrance/Exit Edit Point with the Keypad

- STEP 1 Enable the desired edit point register (VID IN, VID OUT, AUD IN, AUD OUT) by pressing the switch twice in succession. Indicator flashes.
- STEP 2 Enter the edit point value with the keypad. The value will appear on the cue point/diagnostics display. Correct any errors in the entry by using backspace (arrow) key (see Table 3-3, Index No. 15).
- STEP 3 Press ENTER within 5 seconds of entering the last digit in step 2. The keypad value has now been transferred to the enabled edit point register.

Transferring Edit Point Value from One Register to Another

- STEP 1 Enable the register with the value to be transferred (VID IN, VID OUT, AUD IN or AUD OUT) by pressing the switch once. Indicator lights.
- STEP 2 Press the XFR switch (XFR indicator lights).
- STEP 3 Enable register to receive the value as in step 1. Edit point value has now been transferred into the new register (XFR indicator goes out).

Transferring Exit Point Values to the Entrance Point Registers (AUTO TAG Mode)

- STEP 1** Press XFR switch (XFR indicator lights).
- STEP 2** Press ENTER. The exit edit point is automatically transferred from the exit point register to the entrance point register. A new exit point is computed, based on the duration of the previous edit, and the value loaded into the exit point register (the new edit is of the same length as the previous one). XFR indicator goes out.

In split edit mode, both the audio and video exit points will be transferred and their respective exit points computed.

Transferring a Cue Point Value to an Edit Point Register

- STEP 1** Press AUTO (AUTO indicator extinguished) to access cue point registers.
- STEP 2** Enable desired cue point register (CUE 1-5) by pressing its respective switch. Indicator lights.
- STEP 3** Press XFR switch (XFR indicator lights).
- STEP 4** Press AUTO to access edit point registers (AUTO indicator lights).
- STEP 5** Enable edit point register into which the cue point value is to be transferred (AUD IN, AUD OUT, VID IN or VID OUT) by pressing its respective switch. Cue point value is now transferred into the selected edit point register. XFR indicator goes out.

7-5 Displaying Duration of Edit Interval

To display the duration of an edit, select the two edit point registers (AUD IN, AUD OUT, VID IN, VID OUT) with the entrance and exit points of the desired edit. Press either of the selected register switches and, while keeping it depressed, press the remaining switch. The duration from the first edit point to the second edit point will be calculated and displayed on the cue point/diagnostics display.

7-6 Previewing the Edit

The preview capability allows a proposed edit to be viewed as it would appear when recorded on tape. Edit point locations may be checked and modified, if necessary, before the edit is recorded. Additionally, you may preview just the exit point of an edit, rather than the entire edit interval. Edits are previewed as follows:

- STEP 1** Press CUE. Tape will shuttle to the earliest edit point with the selected preroll. Note that the preroll point will not correspond to the value selected by the preroll preset procedure (see paragraphs 5-13 and 5-14). This is due to an automatic synchronizing adjustment applied to the transport servos.
- STEP 2** Press PLAY to begin the preview. When entrance point is reached, AUTO indicator flashes. This indicator continues to flash throughout the edit

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interval. When previewing on a record machine (AUTO and INSERT or ASSEM indicators on), EE indicator lights during the edit.

When exit point is reached, AUTO indicator stops flashing and remains lit continuously. EE indicator goes off.

STEP 3 Press CUE to return to the entrance edit point with preroll.

Examining the Exit Point

STEP 1 Press CUE. Tape will shuttle to the earliest edit point with preroll.

STEP 2 Enable the desired edit point register by pressing either the AUD OUT or VID OUT switch. Indicator lights and the VPR-6 will cue to the selected exit point with preroll.

STEP 3 Press PLAY. If edit interval is longer than the preroll, AUTO indicator flashes and EE indicator remains lit until exit point is reached.

7-7 Trimming the Edit Points

The trim operation allows the edit point location to be changed before recording. Edit points are trimmed as follows:

STEP 1 Enable register with the value to be trimmed (AUD IN, AUD OUT, VID IN or VID OUT) by pressing its switch twice in succession. Indicator flashes.

STEP 2 Press either the + or - trim switch, depending on whether the edit point value is going to be increased or decreased. If the + switch is selected, a P will appear on the right-hand side of the cue point/diagnostics display. Selecting the - switch causes a - to be displayed.

STEP 3 On keypad, enter amount the edit point is to be trimmed. Values up to 99 will be displayed as a frame count. A trim value of more than 99 frames must be entered as minutes, seconds, and frames. Errors in the keypad entry can be corrected with the backspace (arrow) key.

STEP 4 Press ENTER. The trim value is applied to the edit point.

7-8 Recording the Edit

STEP 1 Press CUE. The VTR will cue to the entrance edit point with preroll.

STEP 2 Press PLAY and RECORD simultaneously to perform the edit (PLAY and RECORD indicators lit). When the entrance point is reached, PLAY indicator goes out and AUTO indicator flashes. When the exit point is reached, PLAY indicator lights and AUTO indicator stops flashing and remains on continuously. RECORD indicator then goes out.

7-9 Reviewing the Edit

- STEP 1** Press PLAY twice in succession. Tape automatically cues to the entrance point with preroll and plays back the edit. When performing an insert edit, PLAY indicator flashes until the exit point is reached. When performing an assemble edit, PLAY indicator flashes until the entrance point is reached.
- STEP 2** Press STOP or any of the primary transport control switches to end the review.

7-10 Open-Ended Edits

Open-ended insert edits are performed by making the exit point value equal to that of the entrance point (see paragraph 7-4). Preview the edit and trim the entrance point (if necessary) as described in paragraphs 7-6 and 7-7, respectively. Perform the edit as described in paragraph 7-8 (while cueing to the edit point, the RECORD indicator will flash, indicating that the video and/or audio channels are open-ended). Terminate the edit by pressing any of the primary transport controls. Note that by definition, all assemble edits are open-ended.

7-11 Manual Editing

Manual insert and assemble edits can be performed when the AUTO mode switch is disabled (AUTO indicator off). Manual editing is done without the benefit of preset edit points or the trim, preview, or display duration features. Manual insert and assemble edits are described in paragraphs 7-12 and 7-13, respectively.

7-12 Manual Insert Editing

Manual insert edits may be made using either of two methods. The first method is as follows:

- STEP 1** Set up record levels as described in paragraph 6-7.
- STEP 2** Perform the edit optimize procedure (refer to paragraph 7-2).
- STEP 3** Press INSERT (INSERT indicator lights).
- STEP 4** Select channels to be recorded using the VIDEO and A1 through A4 switches (refer to Table 3-1).
- STEP 5** Move the tape to a location slightly forward of the proposed edit via the transport controls (see Table 3-5). When choosing this location, ensure that sufficient time is allowed for the runup.
- STEP 6** Press the PLAY switch (PLAY indicator lights). View the monitor in order to determine where to begin the edit.

Note

SERVO indicator should go out before the entrance point is reached.

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STEP 7 When tape reaches the desired location, press **PLAY** and **RECORD** simultaneously to begin recording the edit (**RECORD** indicator lights, **PLAY** indicator goes out). Note that there is a five frame delay from the time that **RECORD** is pressed to the time when recording actually begins.

STEP 8 To terminate the edit, press either **STOP**, **PLAY**, or **CUE**.

The second method is as follows:

STEP 1-5 Refer to the previous procedure.

STEP 6 Inhibit recording on all channels by pressing **VIDEO** switch and switches **A1** through **A4** (**VIDEO**, **A1-4** indicators lit).

STEP 7 Press **PLAY** and **RECORD** simultaneously. Because all channels have been record-inhibited, the VPR-6 will enter play mode.

STEP 8 When tape reaches the desired location, enable the channels to be recorded by pressing their respective switches (**VIDEO**, **A1-4**). The enabled channel indicators will go out. **PLAY** indicator goes out and **RECORD** indicator lights.

Note

SERVO indicator should go out before reaching the entrance point.

STEP 9 To terminate the edit, record-inhibit the channels enabled in step 9 using the **VIDEO** and switches **A1** through **A4**.

STEP 10 Press either **STOP**, **PLAY**, or **CUE**. The VPR-6 is now out of record mode.

7-13 Manual Assemble Editing

Manual assemble edits are performed as follows:

STEP 1 Set up record levels as described in paragraph 6-7.

STEP 2 Perform edit optimize procedure (see paragraph 7-2).

STEP 3 Press **ASSEM** (**ASSEM** indicator lights). All channels (**VIDEO**, **A1-4**) are automatically enabled.

STEP 4 Press **PLAY** (**PLAY** indicator lights). View monitor in order to determine where to begin the edit.

STEP 5 When tape reaches the desired location, press **PLAY** and **RECORD**

simultaneously to begin recording the edit (RECORD indicator lights, PLAY indicator goes out). Note that there is a five-frame delay from the time RECORD is pressed to the time when recording actually begins.

Continue recording for several seconds past the material that will eventually be used.

Note

SERVO indicator should go out before the entrance point is reached.

STEP 6 Terminate the edit by pressing either STOP, PLAY, or CUE.